CHAPTER 4

POINT AND NONPOINT SOURCE CHARACTERIZATION OF THE CORDELL HULL LAKE WATERSHED

4.1. BACKGROUND. This chapter is organized by HUC-12 subwatershed, and the description of each subwatershed is divided into four parts:

i. General description of the subwatershed
ii. Description of point source contributions
ii.a. Description of facilities discharging to water bodies listed on the 2004 303(d) list
iii. Description of nonpoint source contributions

The Cordell Hull Lake Watershed (HUC 05130106) has been delineated into three HUC 10 (10-digit) subwatersheds, each of which is composed of one or more HUC-12 subwatersheds.

Information for this chapter was obtained from databases maintained by the Division of Water Pollution Control or provided in the WCS (Watershed Characterization System) data set. The WCS used was version 2.0 (developed by Tetra Tech, Inc for EPA Region 4) released in 2003.

WCS integrates with ArcView® v3.x and Spatial Analyst® v1.1 to analyze user-delineated (sub)watersheds based on hydrologically connected water bodies. Reports are generated by integrating WCS with Microsoft® Word. Land Use/Land Cover information from 1992 MRLC (Multi-Resolution Land Cover) data are calculated based on the proportion of county-based land use/land cover in user-delineated (sub)watersheds. Nonpoint source data in WCS are based on agricultural census data collected 1992–1998; nonpoint source data were reviewed by Tennessee NRCS staff.

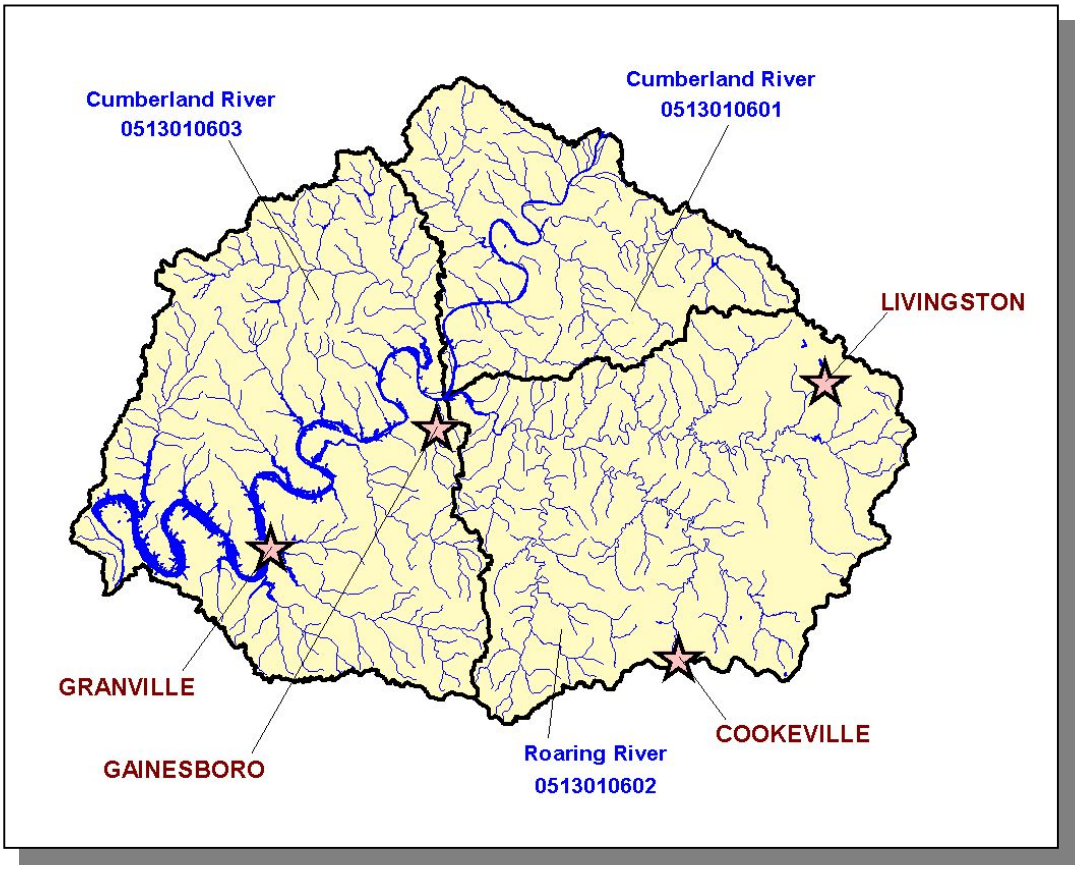

Figure 4-1. The Cordell Hull Lake Watershed is Composed of Three USGS-Delineated Subwatersheds (10-Digit Subwatersheds). *Locations of Cookeville, Gainesboro, Granville, and Livingston are shown for reference.*

4.2. CHARACTERIZATION OF HUC-10 SUBWATERSHEDS. The Watershed Characterization System (WCS) software and data sets provided by EPA Region IV were used to characterize each subwatershed in the Cordell Hull Lake Watershed.

HUC-10	HUC-12
0513010601	051301060101 (Cumberland River)
	051301060102 (Cumberland River)
	051301060103 (Mill Creek)
	051301060104 (Dry Fork Creek)
	051301060105 (Brimstone Creek)
0513010602	051301060201 (Roaring River)
	051301060202 (Roaring River)
	051301060203 (Flat Creek)
	051301060204 (Spring Creek)
	051301060205 (Blackburn Fork)
0513010603	051301060301 (Cumberland River)
	051301060302 (Jennings Creek)
	051301060303 (Wartrace Creek)
	051301060304 (Cumberland River)
	051301060305 (Flynn Lick Creek)
	051301060306 (Martin Creek)
	051301060307 (Cumberland River)
	051301060308 (Defeated Creek)
	051301060309 (Cumberland River)

Table 4-1. HUC-12 Drainage Areas are Nested Within HUC-10 Drainages. *NRCS worked with USGS to delineate the HUC-10 and HUC-12 drainage boundaries.*

4.2.A. 0513010601.

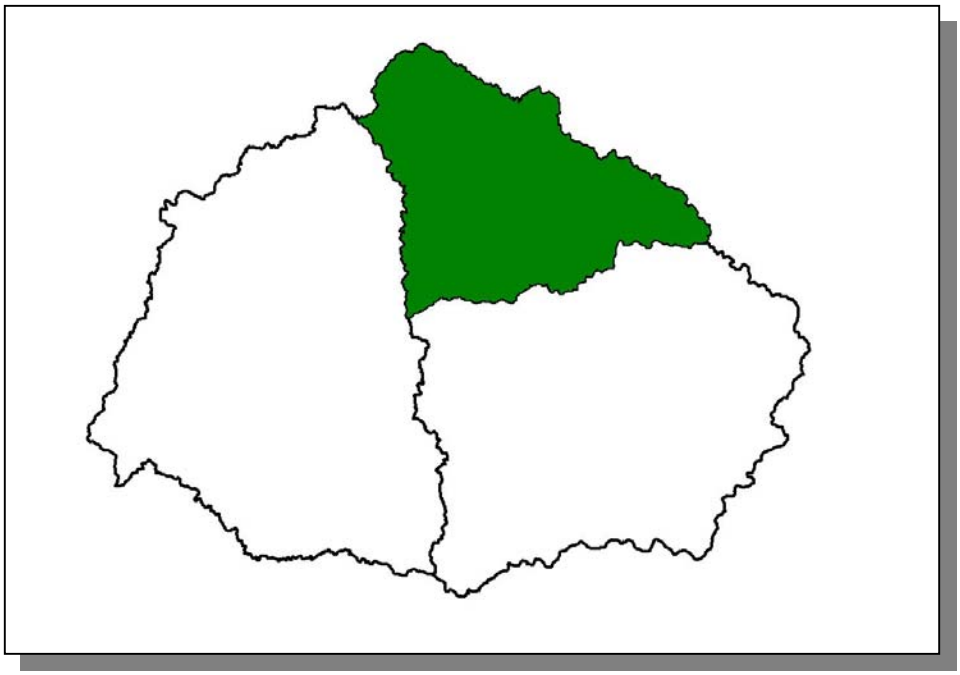

Figure 4-2. Location of Subwatershed 0513010601. *All Cordell Hull Lake HUC-10 subwatershed boundaries are shown for reference.*

4.2.A.i. 051301060101 (Cumberland River).

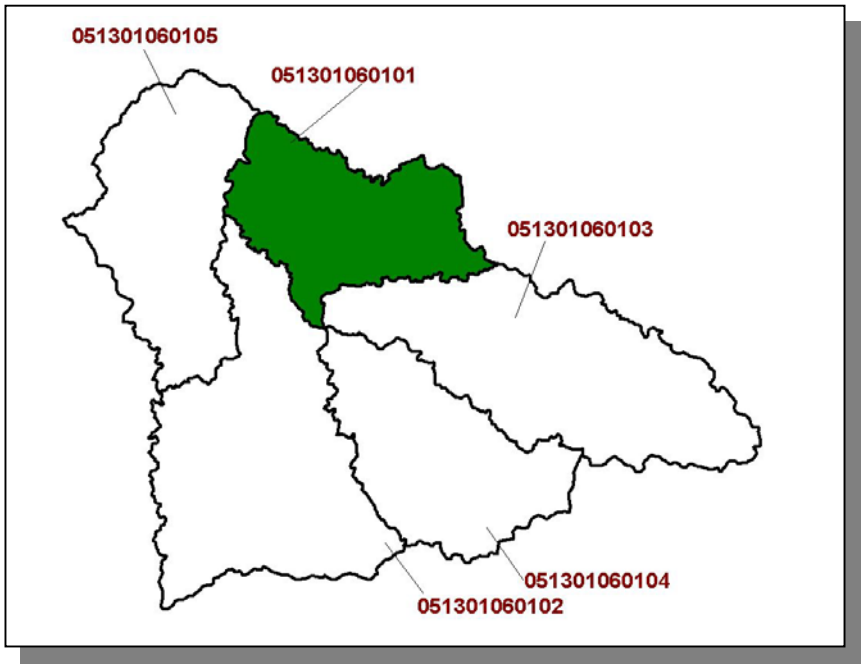

Figure 4-3. Location of Subwatershed 051301060101. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

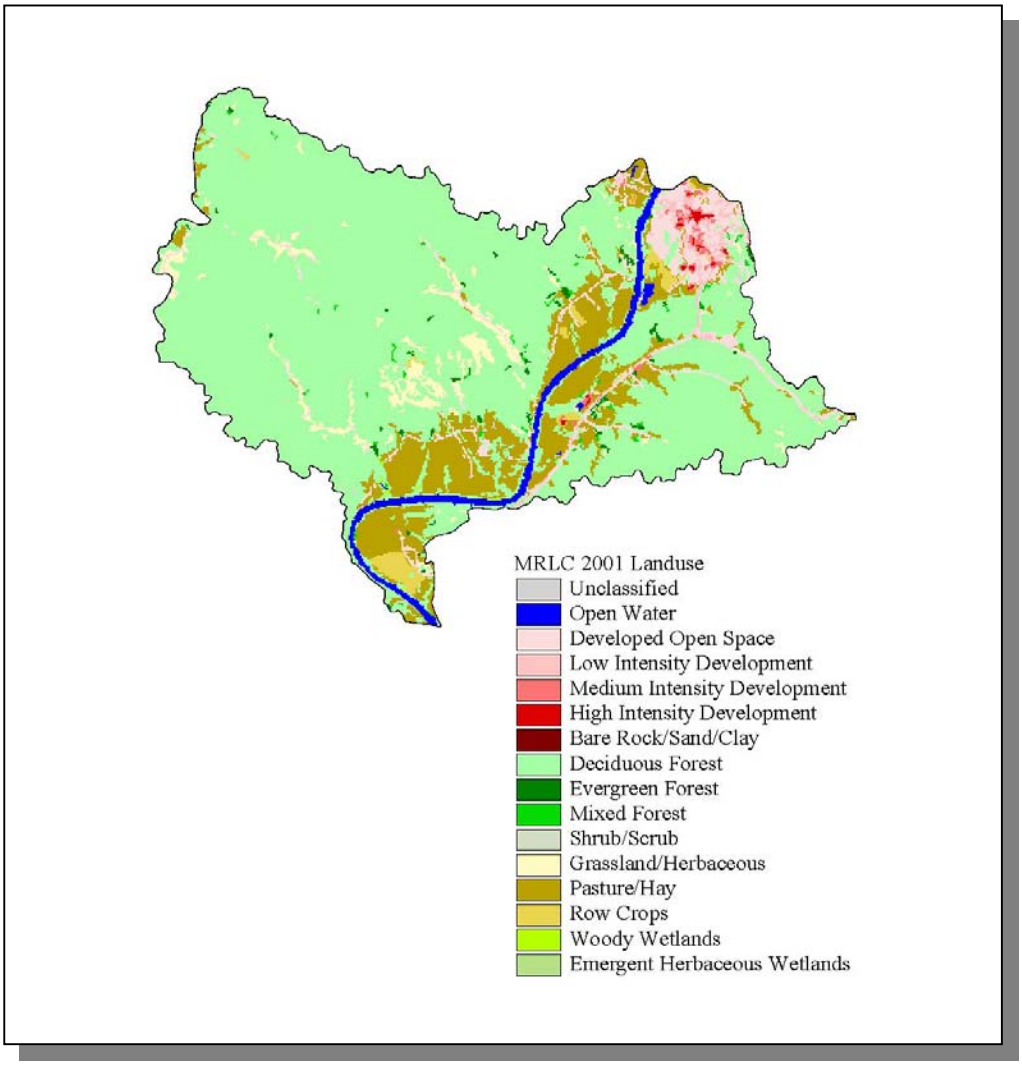

Figure 4-4. Illustration of Land Use Distribution in Subwatershed 051301060101.

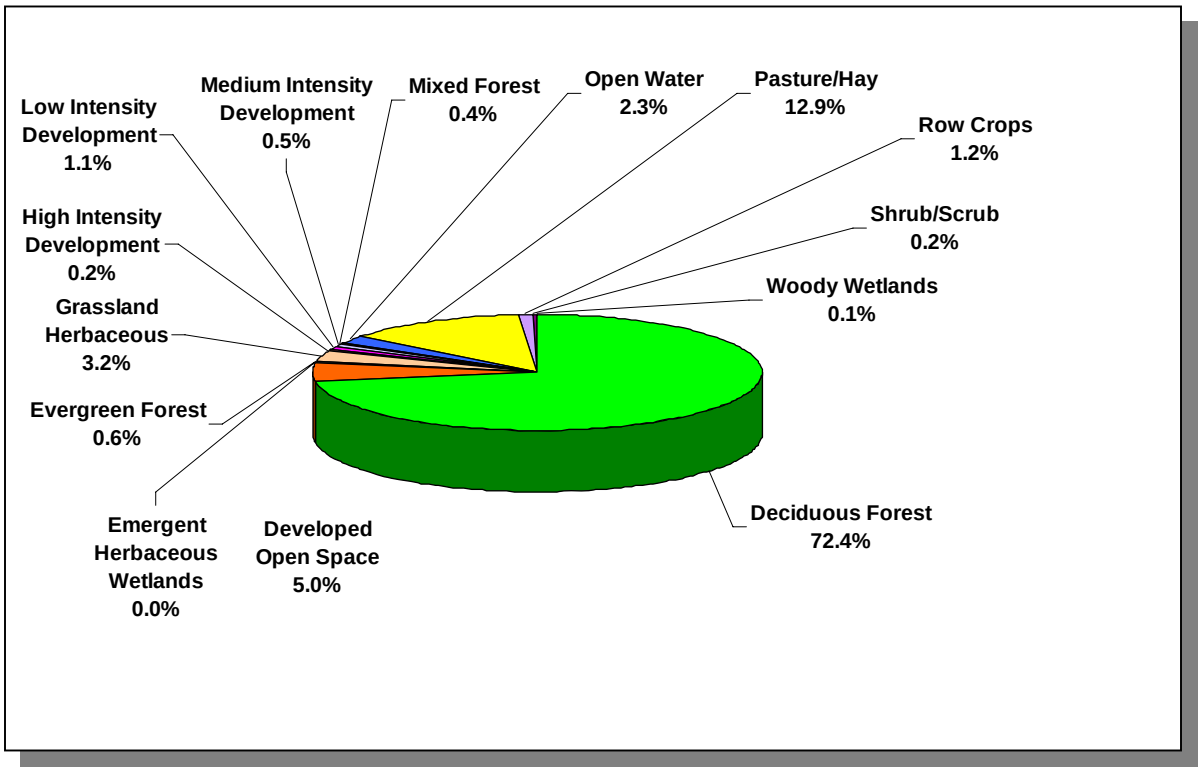

Figure 4-5. Land Use Distribution in Subwatershed 051301060101. *More information is provided in Appendix IV.*

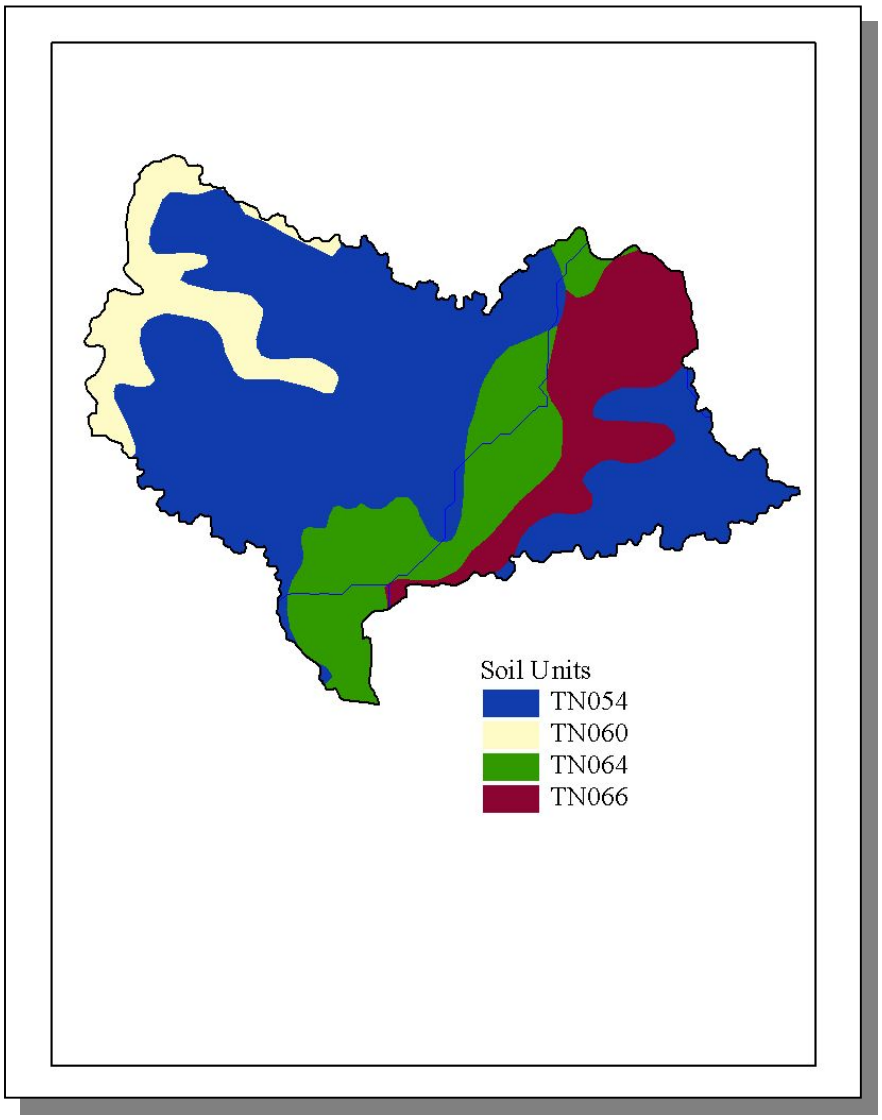

Figure 4-6. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060101.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28

Table 4-2. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060101. *The definition of "Hydrologic Group" is provided in Appendix IV.*

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	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Clay	7,238	7,311	7,976	9.01	652	659	718	10.1

Table 4-3. Population Estimates in Subwatershed 051301060101.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Celina	Clay	1,493	685	645	36	4

Table 4-4. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051301060101.

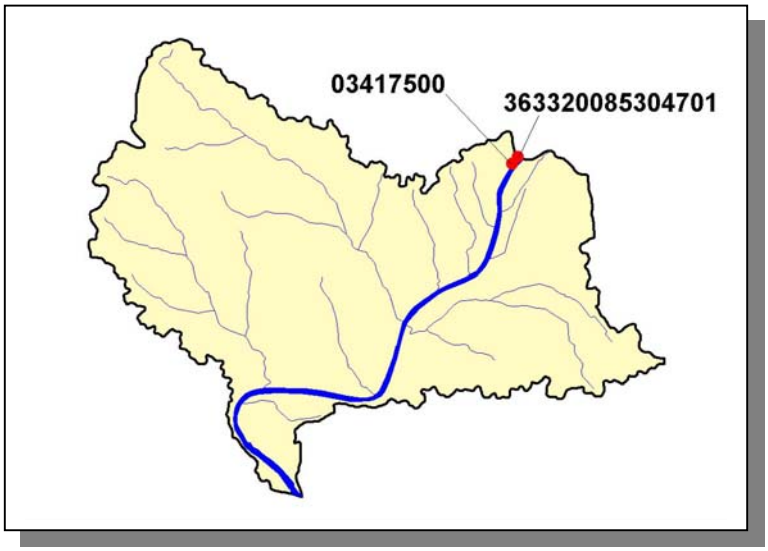

Figure 4-7. Location of Historical Streamflow Data Collection Sites in Subwatershed 051301060101. *More information is provided in Appendix IV.*

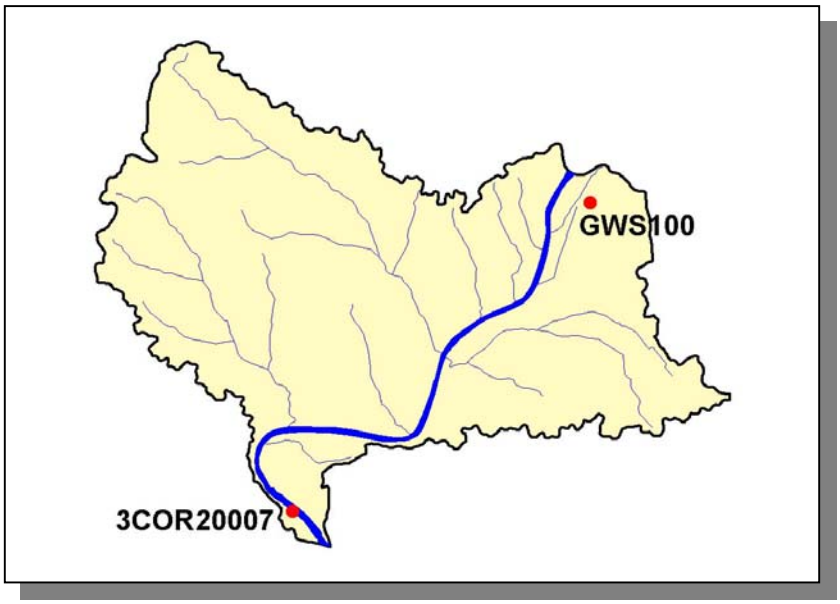

Figure 4-8. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060101. *More information, including site names and locations, is provided in Appendix IV.*

4.2.A.i.a. Point Source Contributions.

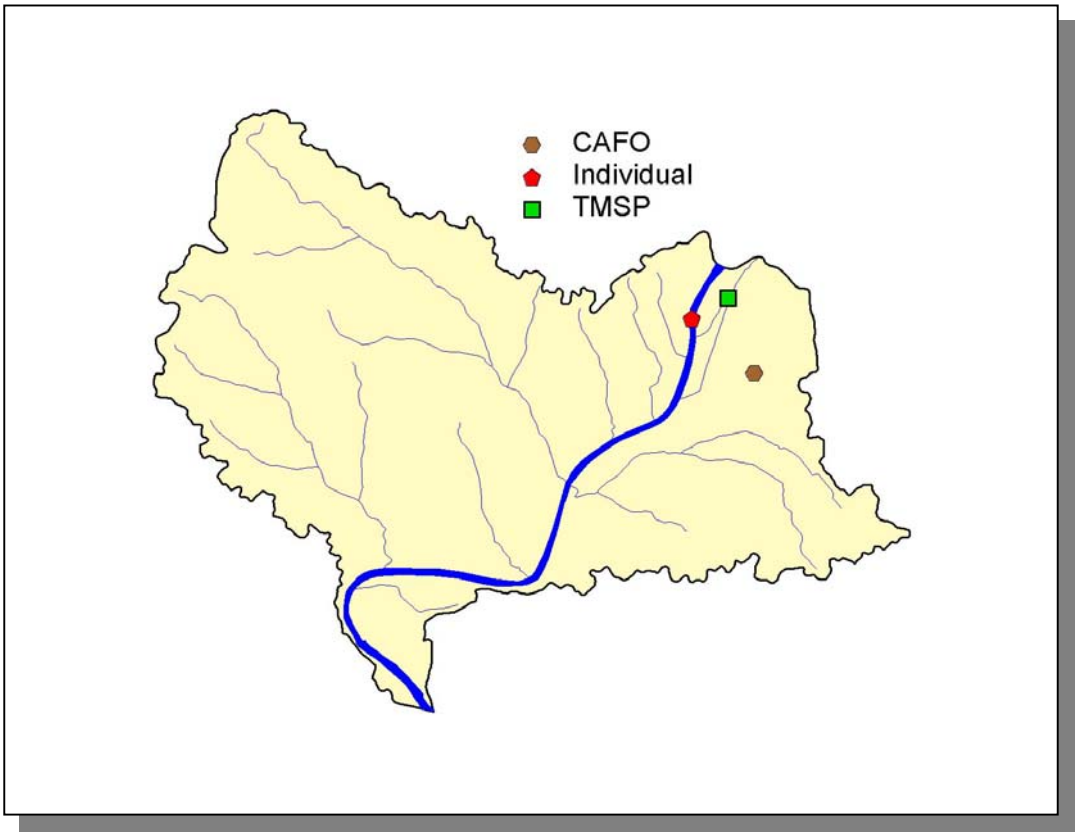

Figure 4-9. Location of Permits Issued in Subwatershed 051301060101. *More information, including the names of facilities, is provided in Appendix IV.*

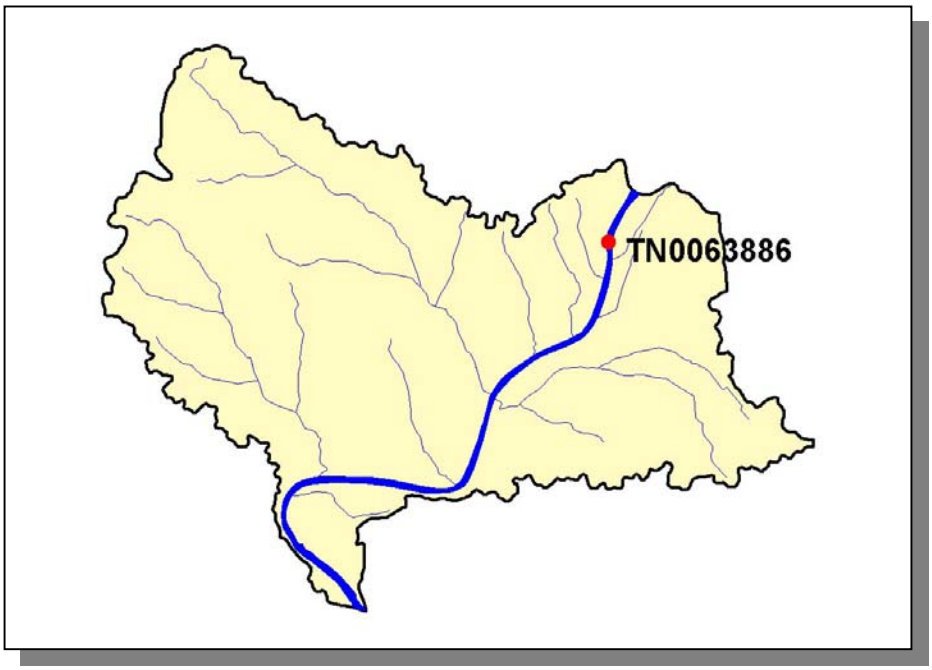

Figure 4-10. Location of Active NPDES Sites in Subwatershed 051301060101. *More information, including the names of facilities, is provided in Appendix IV.*

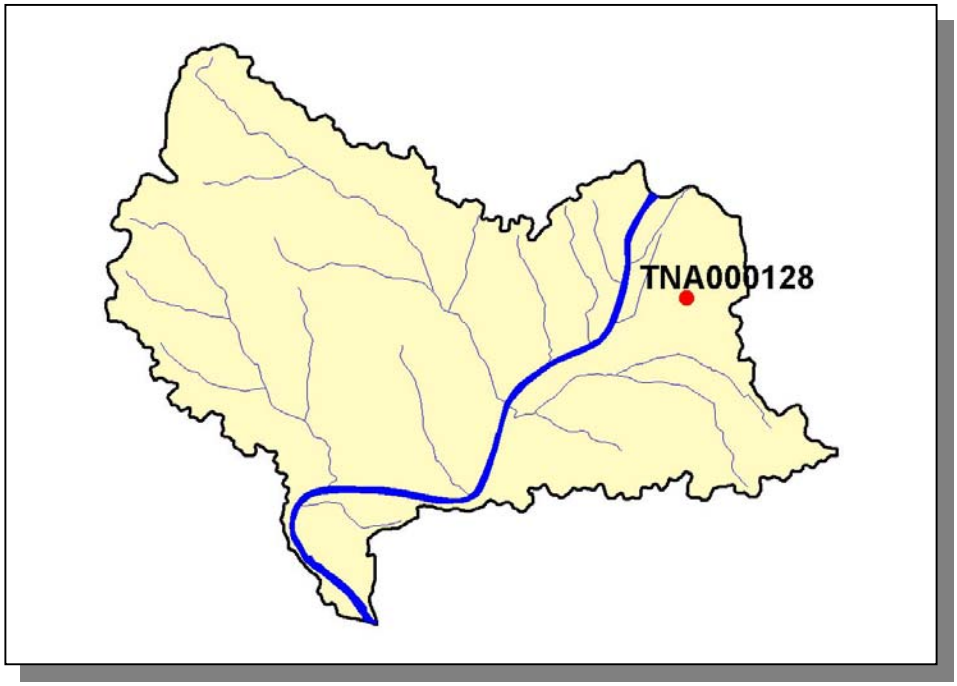

Figure 4-11. Location of Concentrated Animal Feeding Operations (CAFO) in Subwatershed 051301060101. *More information, including the names of facilities, is provided in Appendix IV.*

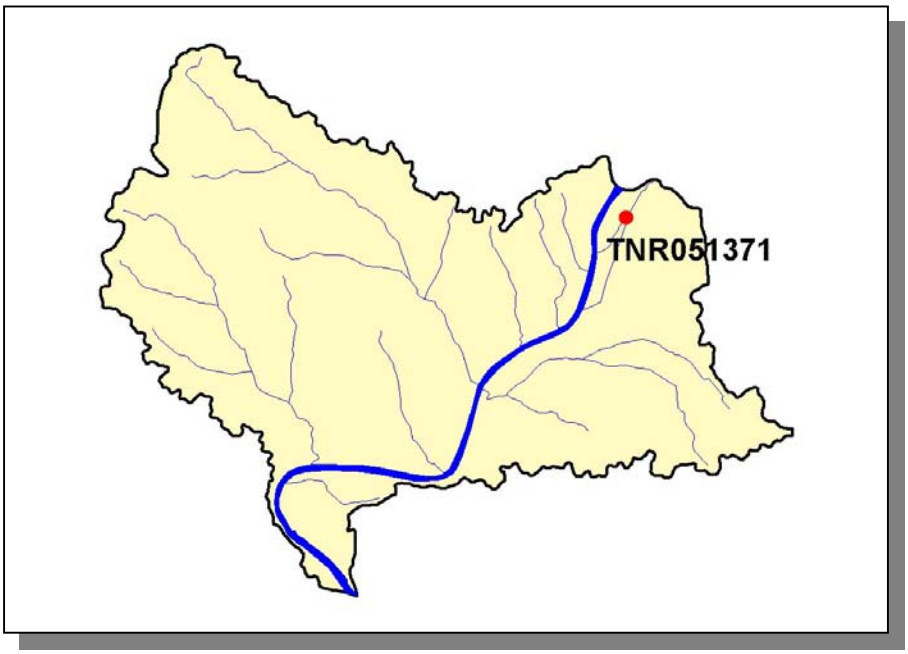

Figure 4-12. Location of TMSP Sites in Subwatershed 051301060101. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.A.i.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS			
Cattle	Chickens (Layers)	Hogs	Sheep
1,146	<5	14	<5

Table 4-5. Summary of Livestock Count Estimates in Subwatershed 051301060101. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.*

LIVESTOCK COUNTS				
County	Cattle	Chickens (Layers)	Hogs	Sheep
Clay	14,574	18	174	23

Table 4-6. Summary of Livestock Count Estimates in Clay County. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Clay	105.1	105.1	2.3	10.1

Table 4-7. Forest Acreage and Annual Removal Rates (1987-1994) in Clay County.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	1.14
Grass (Hayland)	0.40
Legumes, Grass (Hayland)	0.53
Grass, Forbs, Legumes (Mixed Pasture)	1.38
Tobacco (Row Crops)	28.52
Farmsteads and Ranch Headquarters	1.56

Table 4-8. Annual Estimated Total Soil Loss in Subwatershed 051301060101.

4.2.A.ii. 051301060102 (Cumberland River).

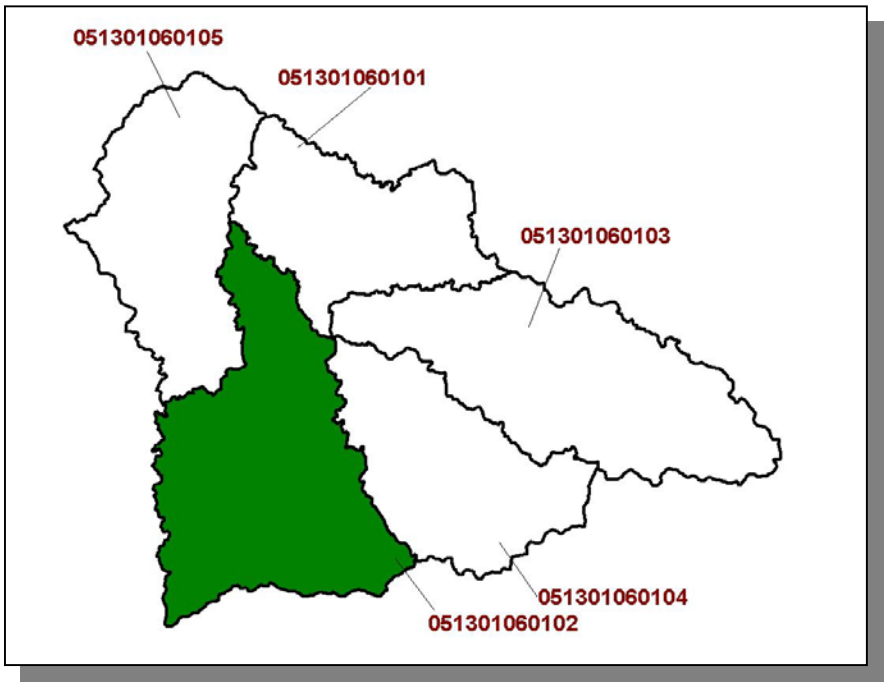

Figure 4-13. Location of Subwatershed 051301060102. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

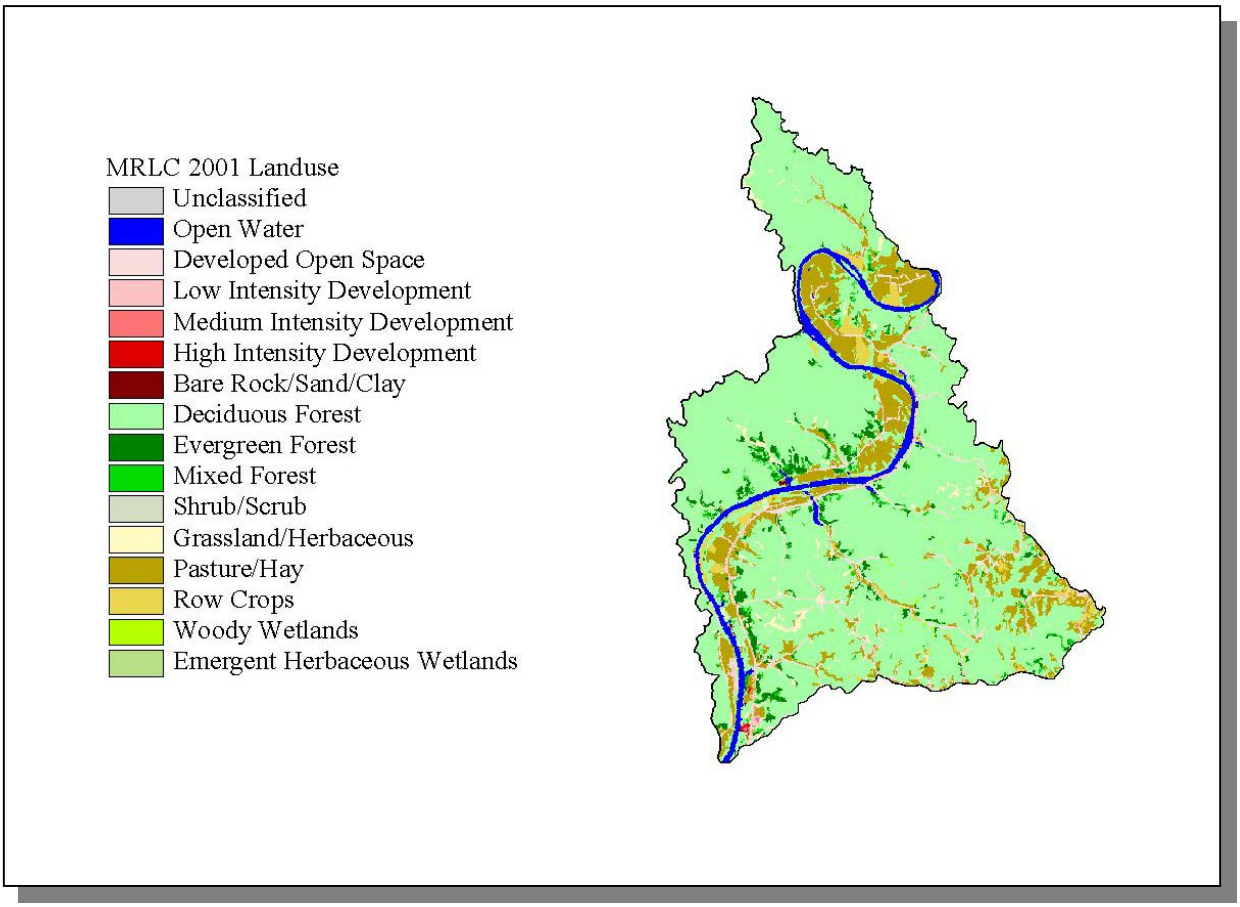

Figure 4-14. Illustration of Land Use Distribution in Subwatershed 051301060102.

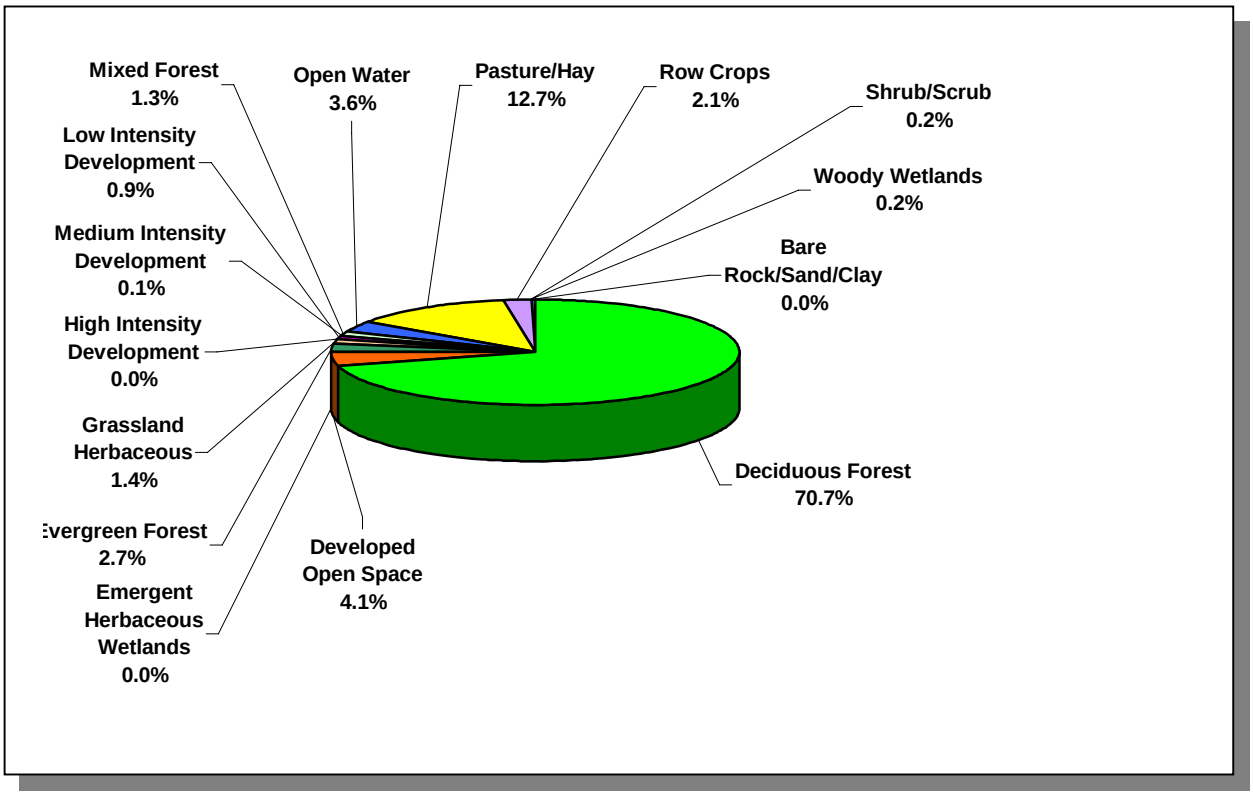

Figure 4-15. Land Use Distribution in Subwatershed 051301060102. *More information is provided in Appendix IV.*

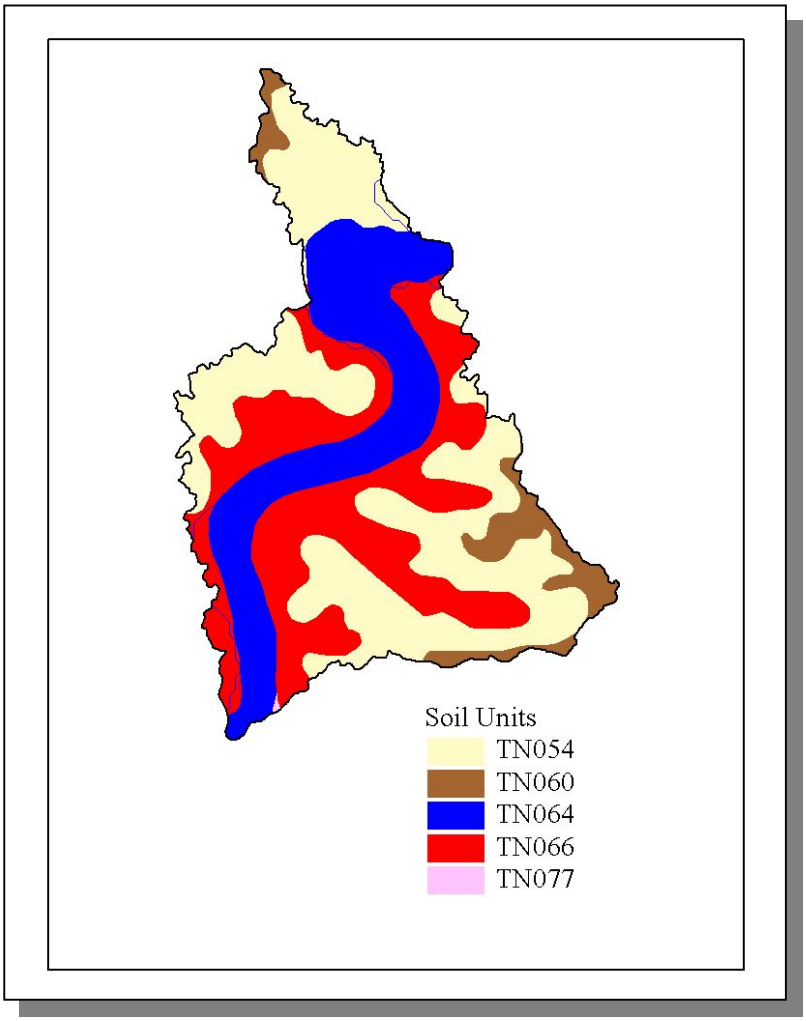

Figure 4-16. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060102.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28
TN077	4.00	C	2.16	5.03	Loam	0.34

Table 4-9. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060102. *The definition of "Hydrologic Group" is provided in Appendix IV.*

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	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Clay	7,238	7,311	7,976	2.48	180	182	198	10.0
Jackson	9,297	9,537	10,984	10.96	1,019	1,045	1,203	18.1
Total	**16,535**	**16,848**	**18,960**		**1,199**	**1,227**	**1,401**	**16.8**

Table 4-10. Population Estimates in Subwatershed 051301060102.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Gainesboro	Jackson	1,002	495	411	82	2

Table 4-11. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051301060102.

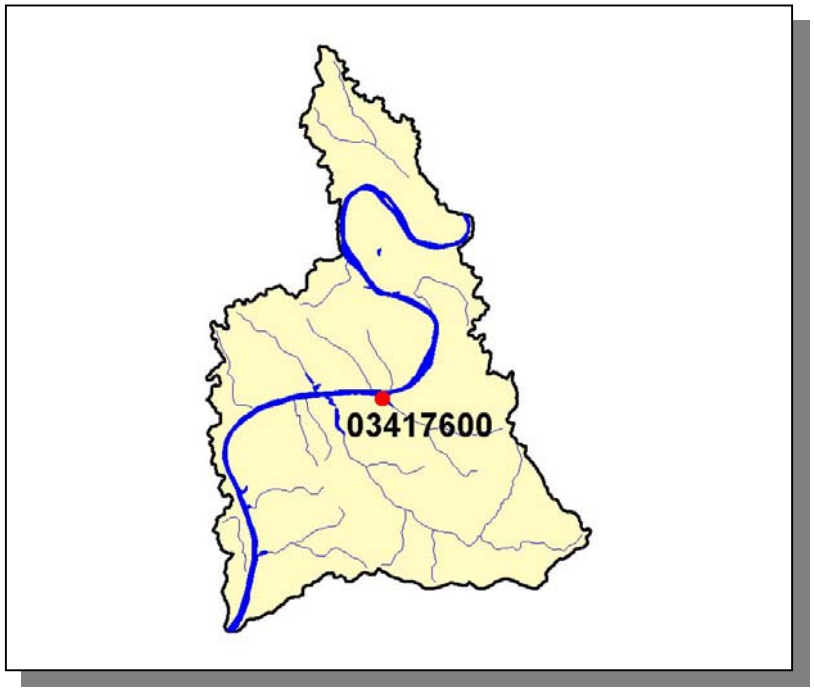

Figure 4-17. Location of Historical Streamflow Data Collection Sites in Subwatershed 051301060102. *More information is provided in Appendix IV.*

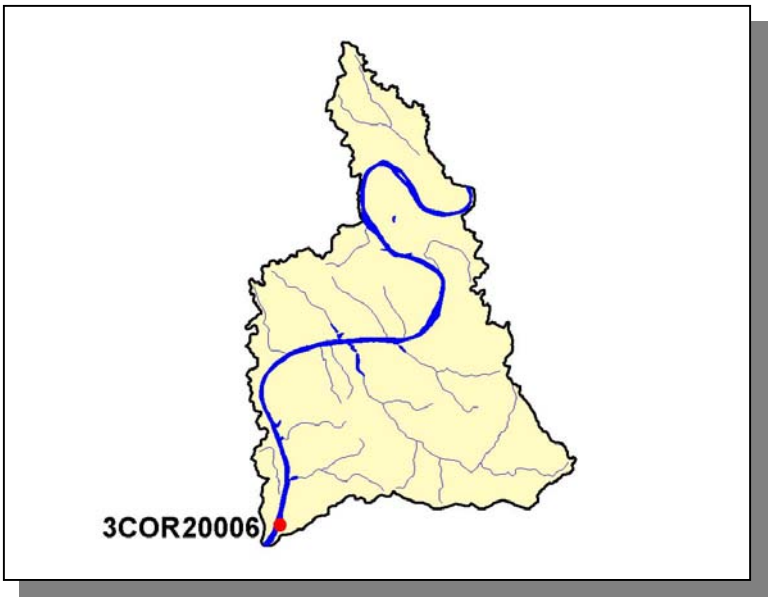

Figure 4-18. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060102. *More information, including site names and locations, is provided in Appendix IV.*

4.2.A.ii.a. Point Source Contributions.

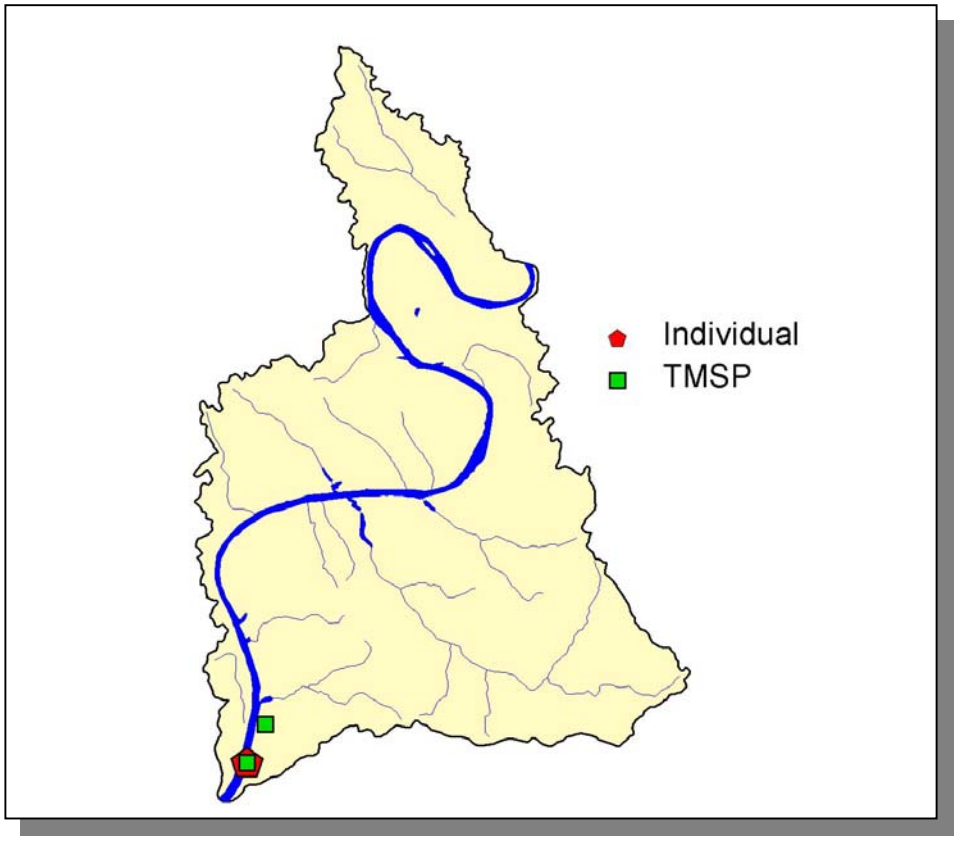

Figure 4-19. Location of Permits Issued in Subwatershed 051301060102. *More information, including the names of facilities, is provided in Appendix IV.*

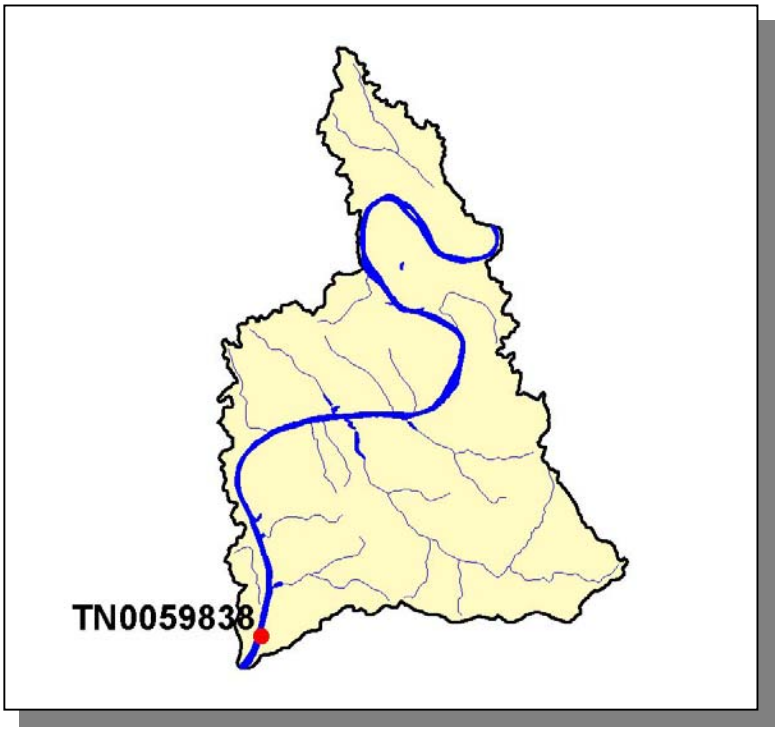

Figure 4-20. Location of Active NPDES Sites in Subwatershed 051301060102. *More information, including the names of facilities, is provided in Appendix IV.*

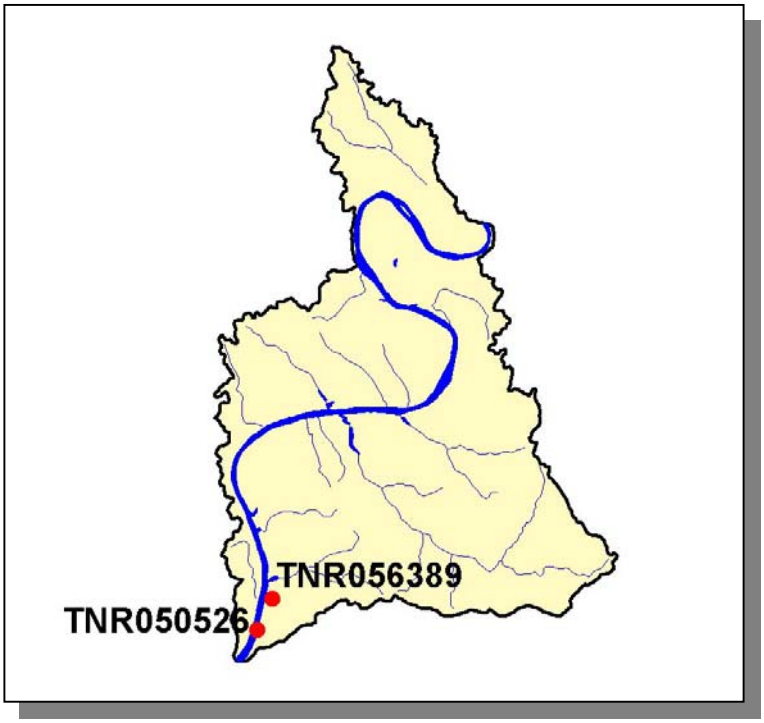

Figure 4-21. Location of TMSP Sites in Subwatershed 051301060102. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.A.ii.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
786	1,793	<5	<5	51	5

Table 4-12. Summary of Livestock Count Estimates in Subwatershed 051301060102. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Clay	0	14,574	0	18	174	23
Jackson	6,962	12,086	10	727	403	39

Table 4-13. Summary of Livestock Count Estimates in Clay and Jackson Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Clay	105.1	105.1	2.3	10.1
Jackson	135.9	135.9	0.9	5.1

Table 4-14. Forest Acreage and Annual Removal Rates (1987-1994) in Clay and Jackson Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	2.07
Grass (Hayland)	0.40
Legumes (Hayland)	0.17
Legumes, Grass (Hayland)	0.53
Grass, Forbs, Legumes (Mixed Pasture)	1.89
Corn (Row Crops)	21.43
Tobacco (Row Crops)	28.52
Farmsteads and Ranch Headquarters	1.35

Table 4-15. Annual Estimated Total Soil Loss in Subwatershed 051301060102.

4.2.A.iii. 051301060103 (Mill Creek).

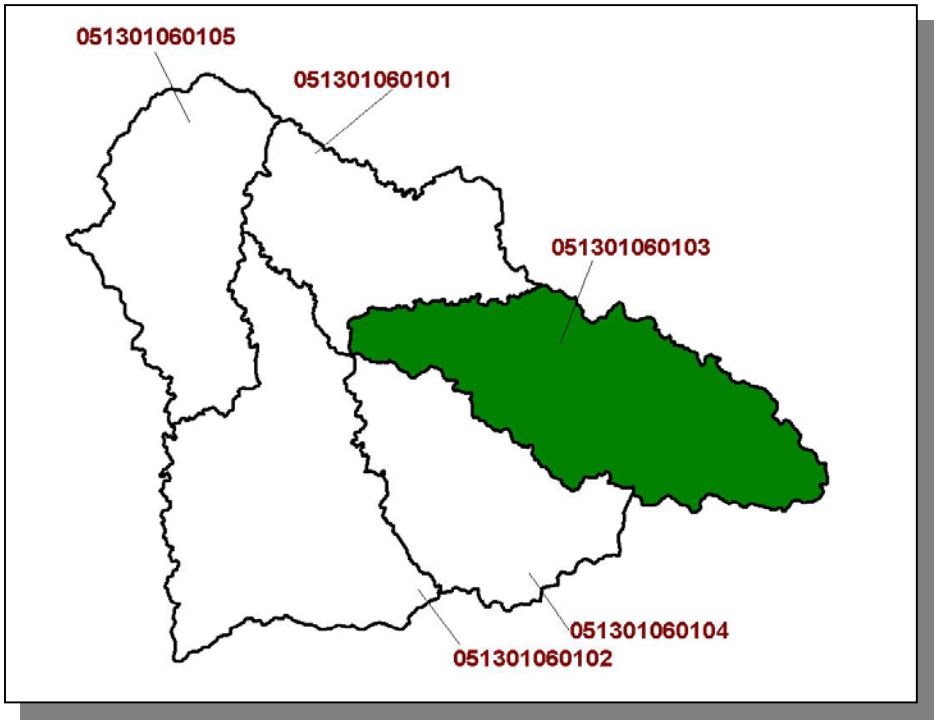

Figure 4-22. Location of Subwatershed 051301060103. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

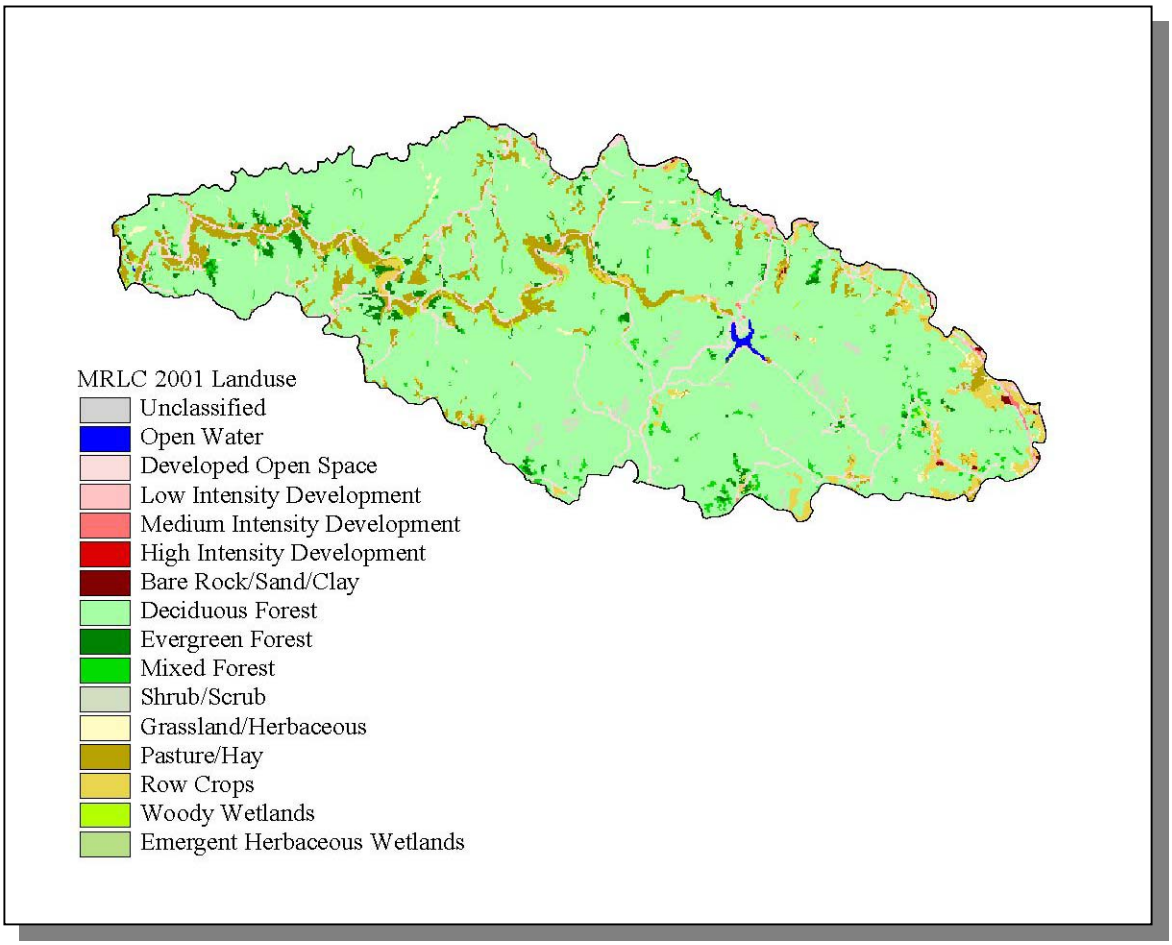

Figure 4-23. Illustration of Land Use Distribution in Subwatershed 051301060103.

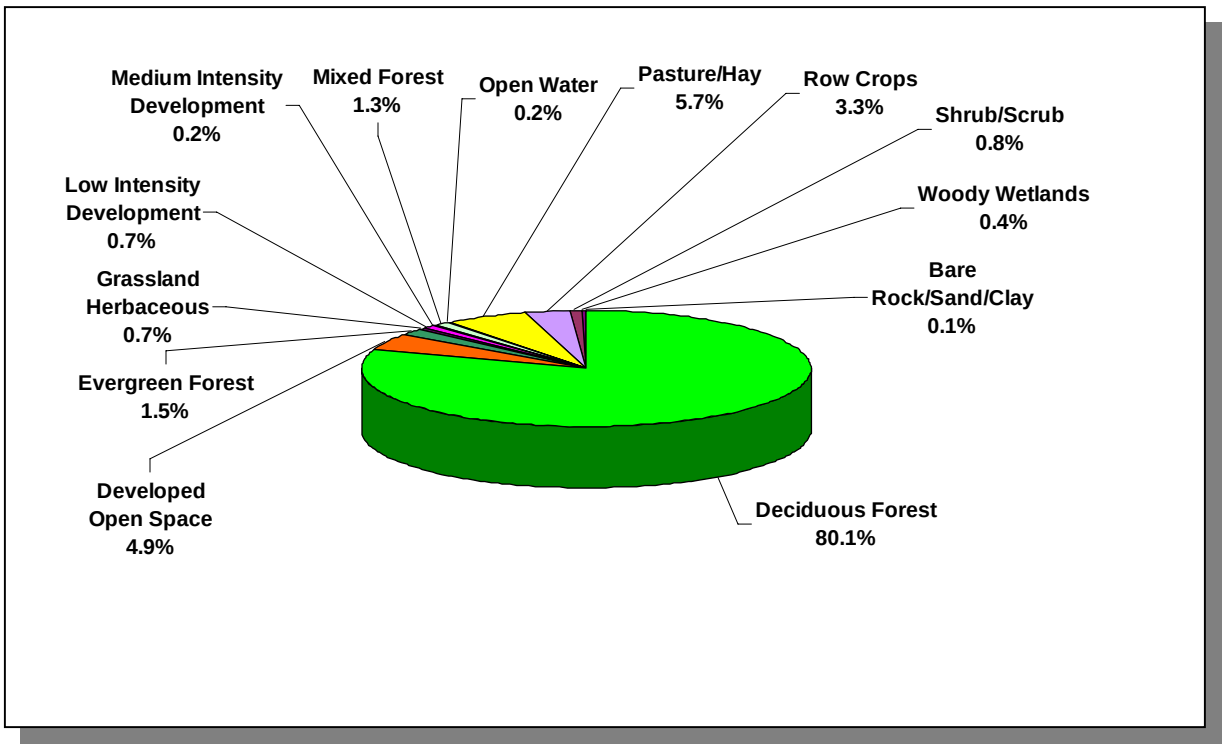

Figure 4-24. Land Use Distribution in Subwatershed 051301060103. *More information is provided in Appendix IV.*

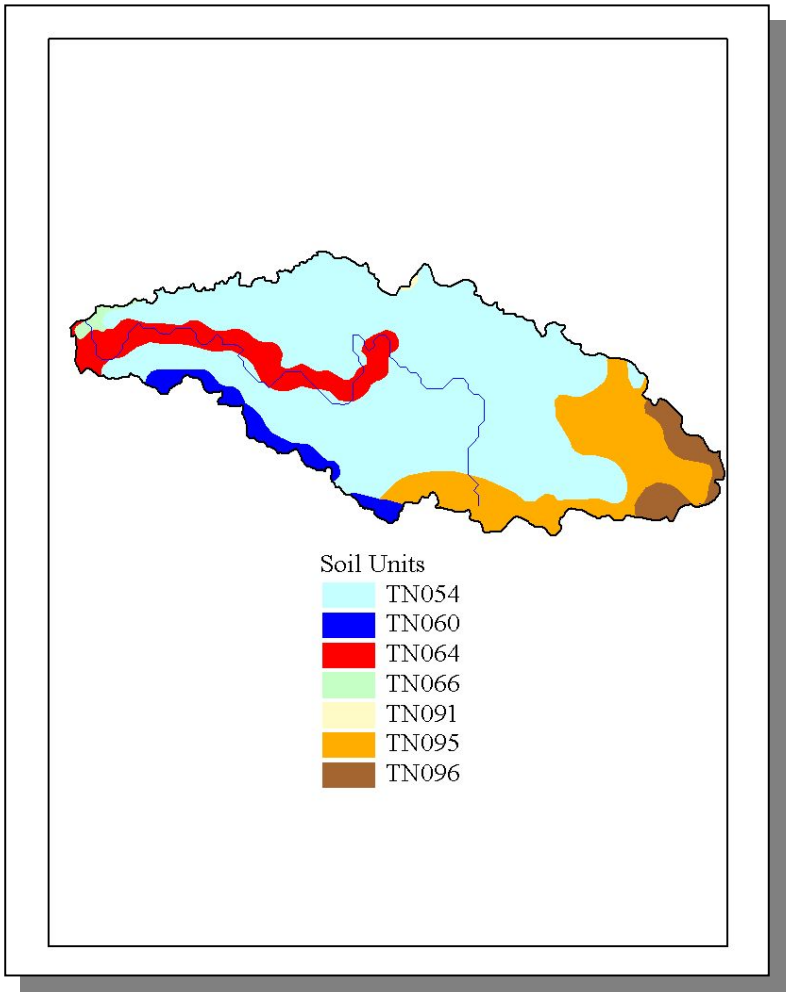

Figure 4-25. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060103.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28
TN091	0.00	B	2.95	5.86	Loam	0.34
TN095	0.00	B	2.35	5.12	Loam	0.31
TN096	19.00	C	1.22	5.16	Silty Loam	0.38

Table 4-16. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060103. *The definition of "Hydrologic Group" is provided in Appendix IV.*

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	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Clay	7,238	7,311	7,976	5.93	429	433	473	10.3
Overton	17,636	19,171	20,118	5.27	930	1,011	1,061	14.1
Total	**24,874**	**26,482**	**28,094**		**1,359**	**1,444**	**1,534**	**12.9**

Table 4-17. Population Estimates in Subwatershed 051301060103.

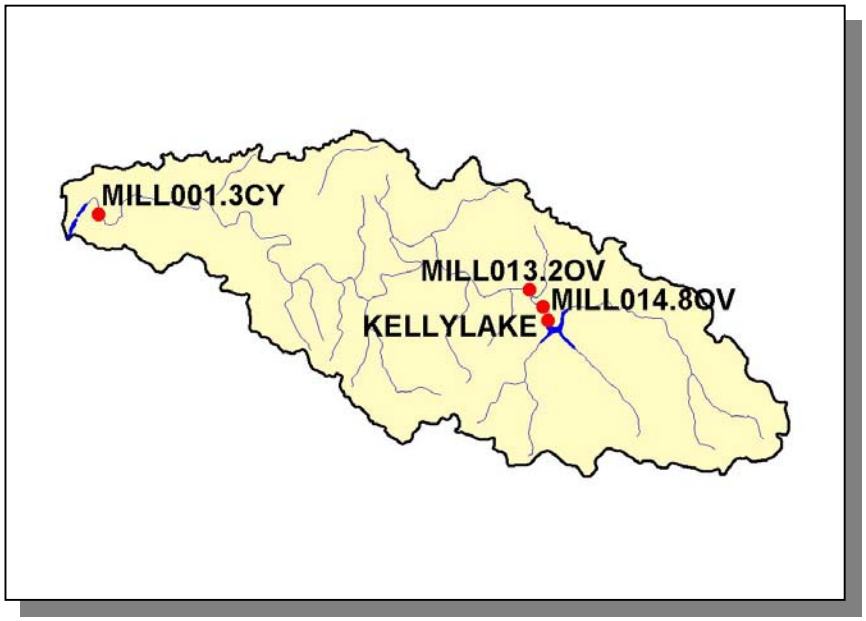

Figure 4-26. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060103. *More information, including site names and locations, is provided in Appendix IV.*

4.2.A.iii.a. Point Source Contributions.

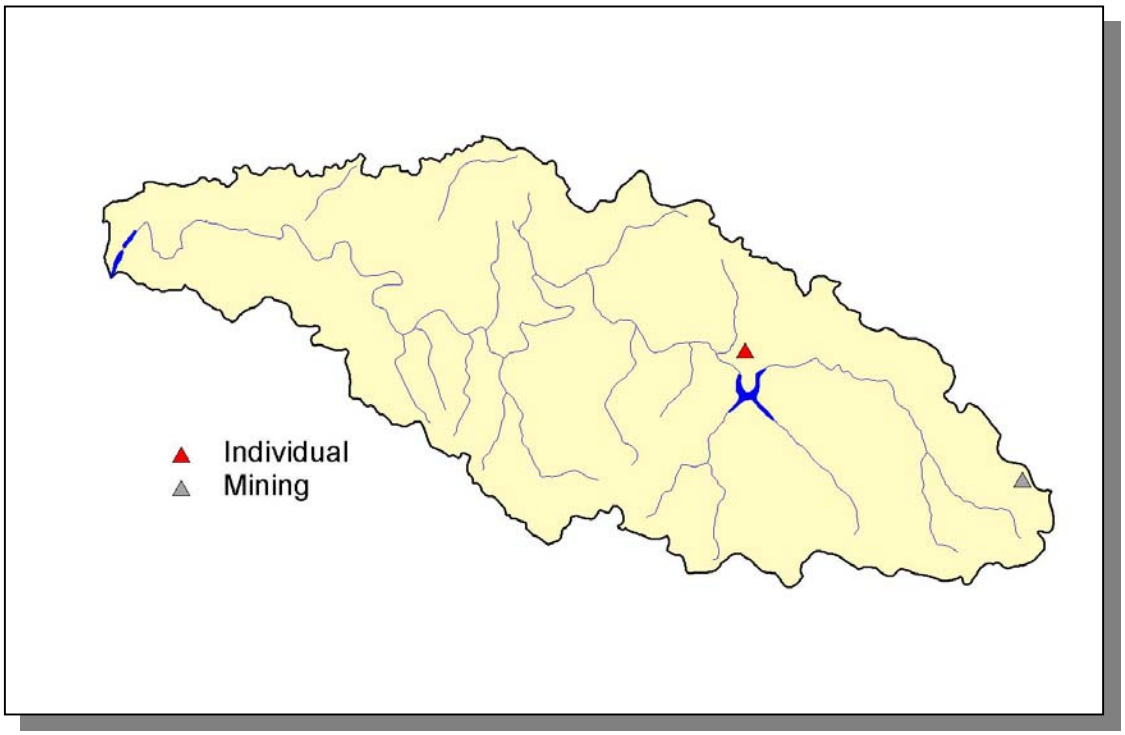

Figure 4-27. Location of Permits Issued in Subwatershed 051301060103. *More information, including the names of facilities, is provided in Appendix IV.*

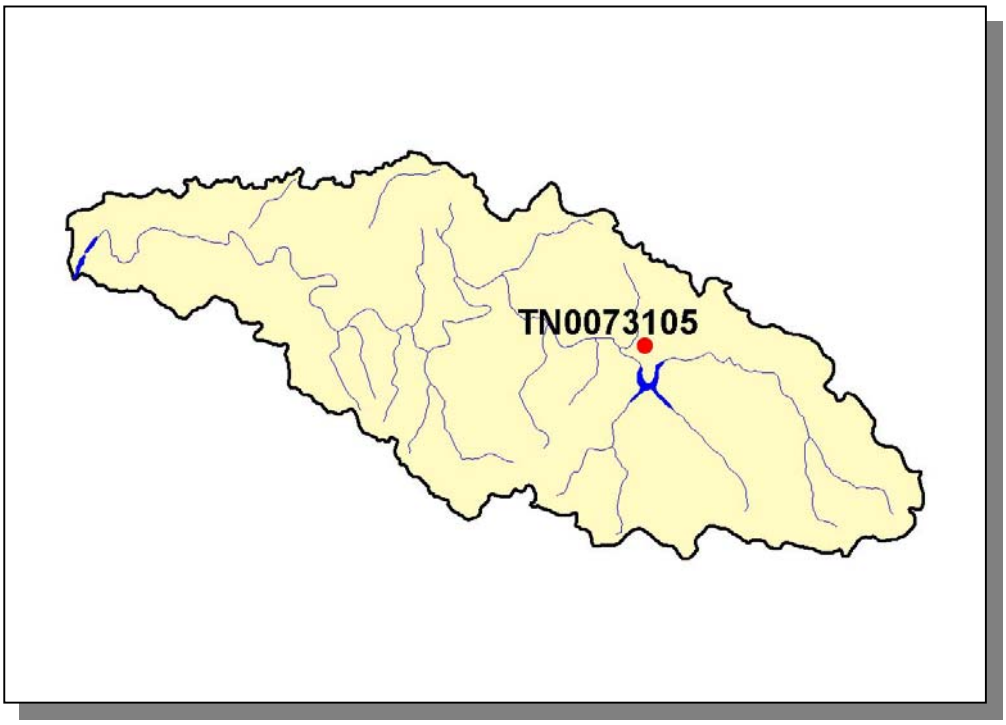

Figure 4-28. Location of Active NPDES Sites in Subwatershed 051301060103. *More information, including the names of facilities, is provided in Appendix IV.*

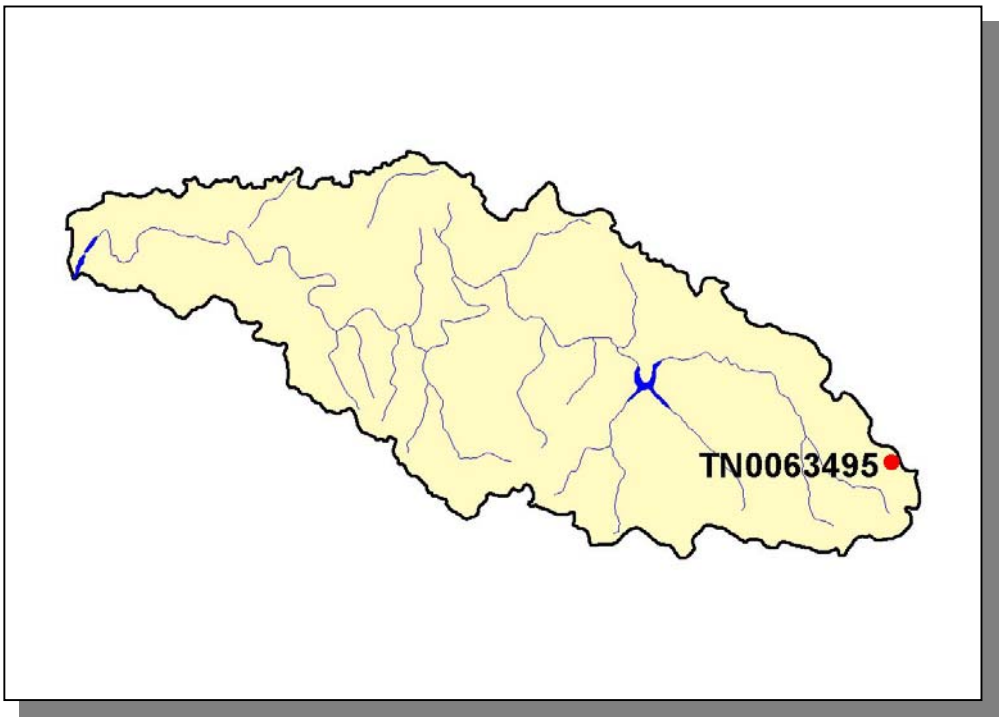

Figure 4-29. Location of Actve Mining Sites in Subwatershed 051301060103. *More information, including the names of mining operations, is provided in Appendix IV.*

4.2.A.iii.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
152	640	12	<5	12	<5

Table 4-18. Summary of Livestock Count Estimates in Subwatershed 051301060103. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Clay	0	14,574	0	18	174	23
Overton	15,150	27,812	1,200	1,173	811	59

Table 4-19. Summary of Livestock Count Estimates in Clay and Overton Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Clay	105.1	105.1	2.3	10.1
Overton	170.3	170.3	1.7	7.0

Table 4-20. Forest Acreage and Annual Removal Rates (1987-1994) in Clay and Overton Counties.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.62
Grass (Hayland)	0.34
Legumes, Grass (Hayland)	1.93
Grass, Forbs, Legumes (Mixed Pasture)	0.96
Corn (Row Crops)	4.35
Tobacco (Row Crops)	28.52
Soybeans (Row Crops)	10.79
Wheat (Close-Grown Cropland)	7.00
Other Vegetable and Truck Crops	21.46
Conservation Reserve Program Lands	0.46
Farmsteads and Ranch Headquarters	0.98

Table 4-21. Annual Estimated Total Soil Loss in Subwatershed 051301060103.

4.2.A.iv. 051301060104 (Dry Fork Creek).

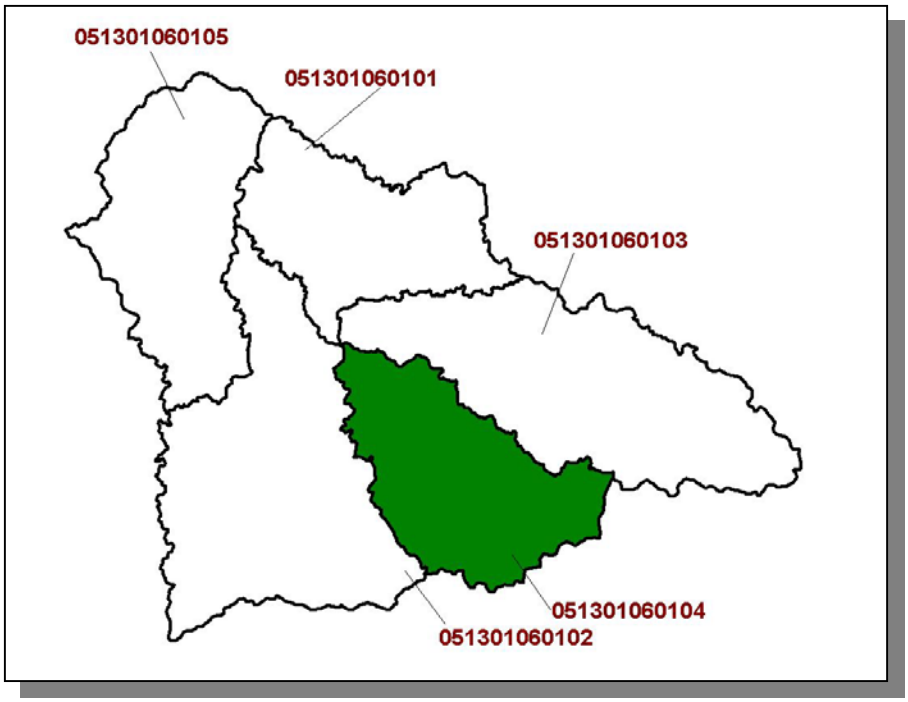

Figure 4-30. Location of Subwatershed 051301060104. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

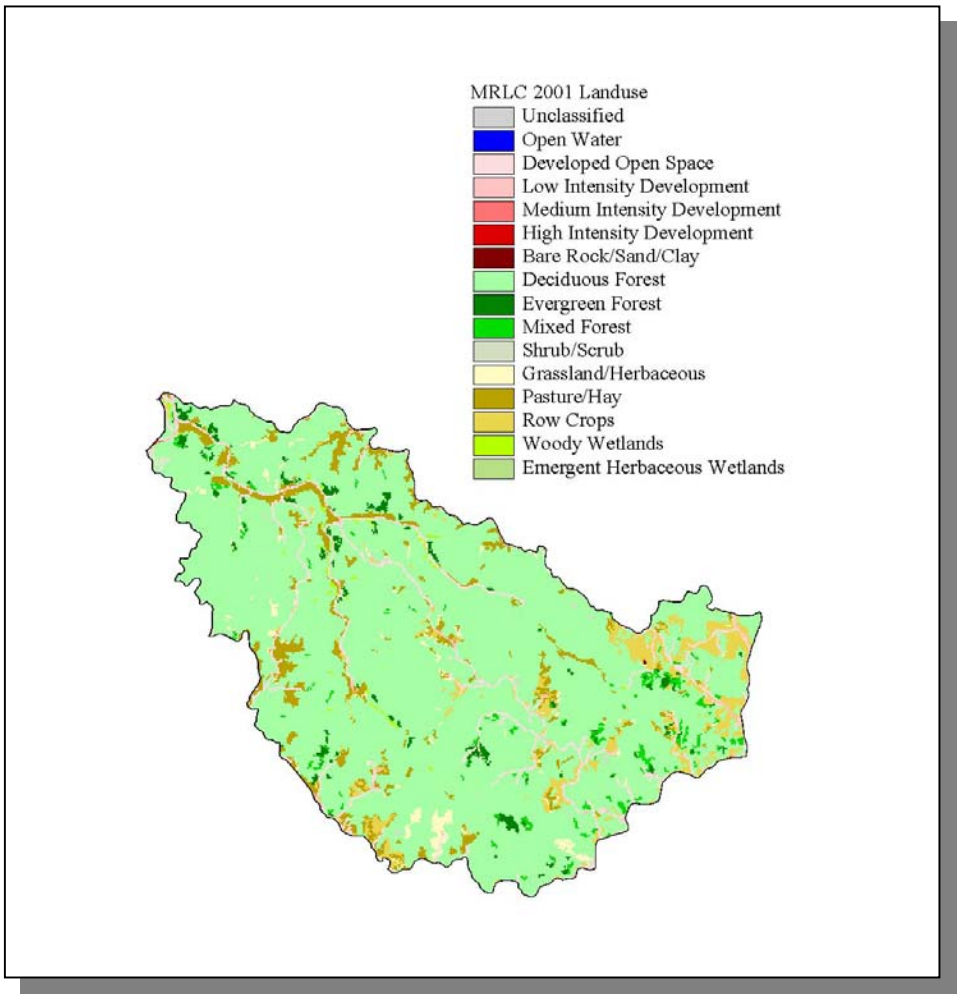

Figure 4-31. Illustration of Land Use Distribution in Subwatershed 051301060104.

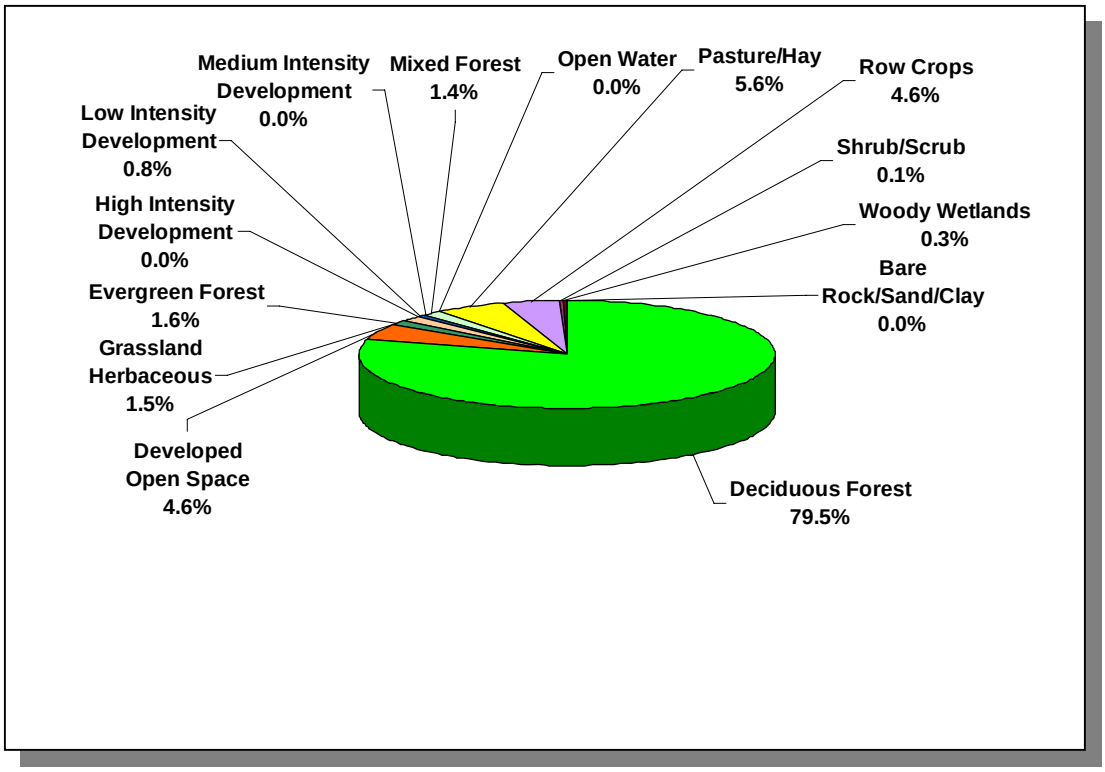

Figure 4-32. Land Use Distribution in Subwatershed 051301060104. *More information is provided in Appendix IV.*

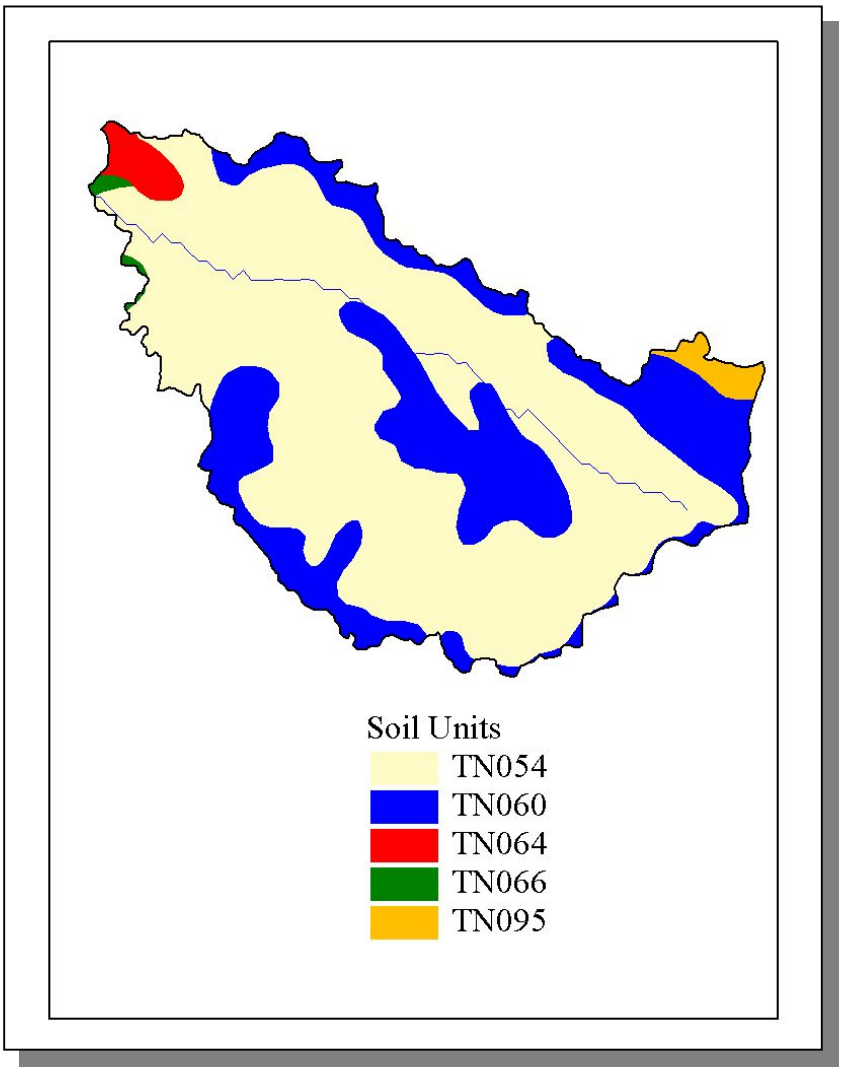

Figure 4-33. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060104.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28
TN095	0.00	B	2.35	5.12	Loam	0.31

Table 4-22. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060104. *The definition of "Hydrologic Group" is provided in Appendix IV.*

.

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Clay	7,238	7,311	7,976	4.62	334	338	369	10.5
Jackson	9,297	9,537	10,984	2.16	201	206	237	17.9
Overton	17,636	19,171	20,118	1.62	286	311	327	14.3
Total	**34,171**	**36,019**	**39,078**		**821**	**855**	**933**	**13.6**

Table 4-23. Population Estimates in Subwatershed 051301060104.

Figure 4-34. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060104. *More information, including site names and locations, is provided in Appendix IV.*

4.2.A.iv.a. Point Source Contributions.

There are no point source contributions in this subwatershed.

4.2.A.iv.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
204	523	10	<5	13	<5

Table 4-24. Summary of Livestock Count Estimates in Subwatershed 051301060104. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Clay	0	14,574	0	18	174	23
Jackson	6,962	12,086	10	727	403	39
Overton	15,150	27,812	1,200	1,173	811	59

Table 4-25. Summary of Livestock Count Estimates in Clay, Jackson, and Overton Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Clay	105.1	105.1	2.3	10.1
Jackson	135.9	135.9	0.9	5.1
Overton	170.3	170.3	1.7	7.0

Table 4-26. Forest Acreage and Annual Removal Rates (1987-1994) in Clay, Jackson, and Overton Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	1.19
Grass (Hayland)	0.36
Legumes (Hayland)	0.17
Legumes, Grass (Hayland)	1.39
Grass, Forbs, Legumes (Mixed Pasture)	1.35
Corn (Row Crops)	12.79
Tobacco (Row Crops)	28.52
Soybeans (Row Crops)	10.79
Wheat (Close-Grown Cropland)	7.00
Other Vegetable and Truck Crops	21.46
Conservation Reserve Program Lands	0.46
Farmsteads and Ranch Headquarters	1.23

Table 4-27. Annual Estimated Total Soil Loss in Subwatershed 051301060104.

4.2.A.v. 051301060105 (Brimstone Creek).

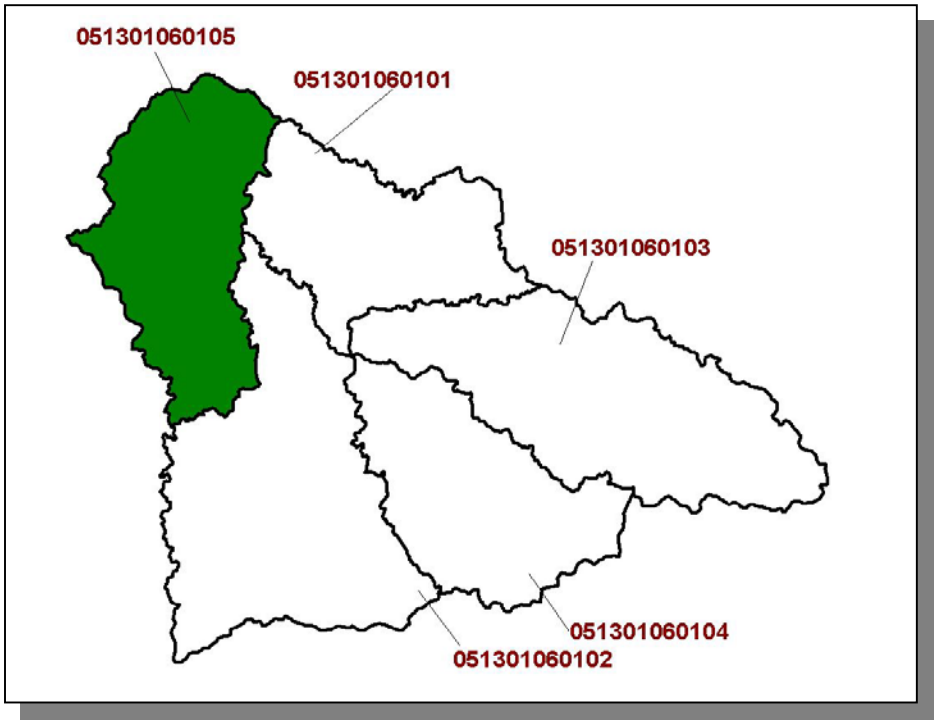

Figure 4-35. Location of Subwatershed 051301060105. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

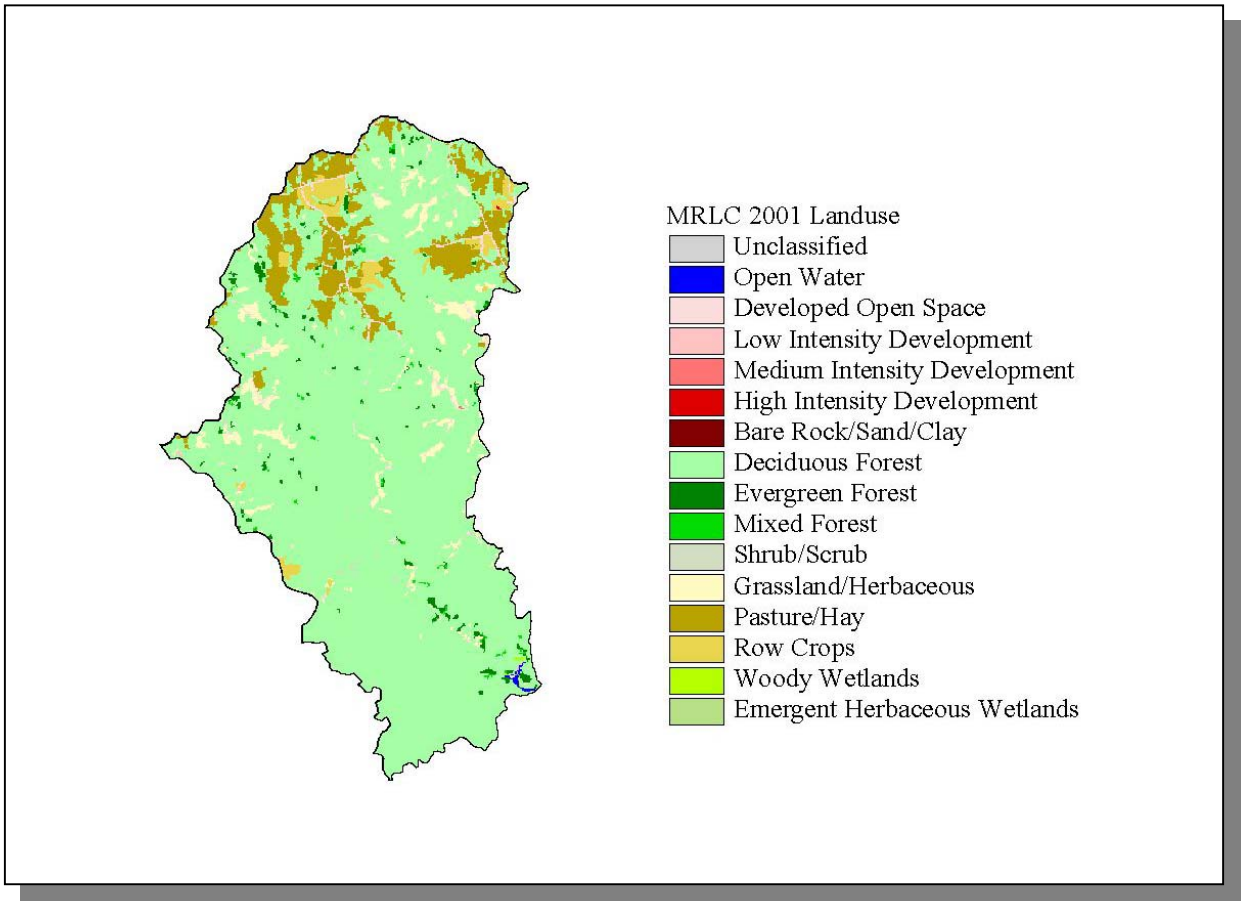

Figure 4-36. Illustration of Land Use Distribution in Subwatershed 051301060105.

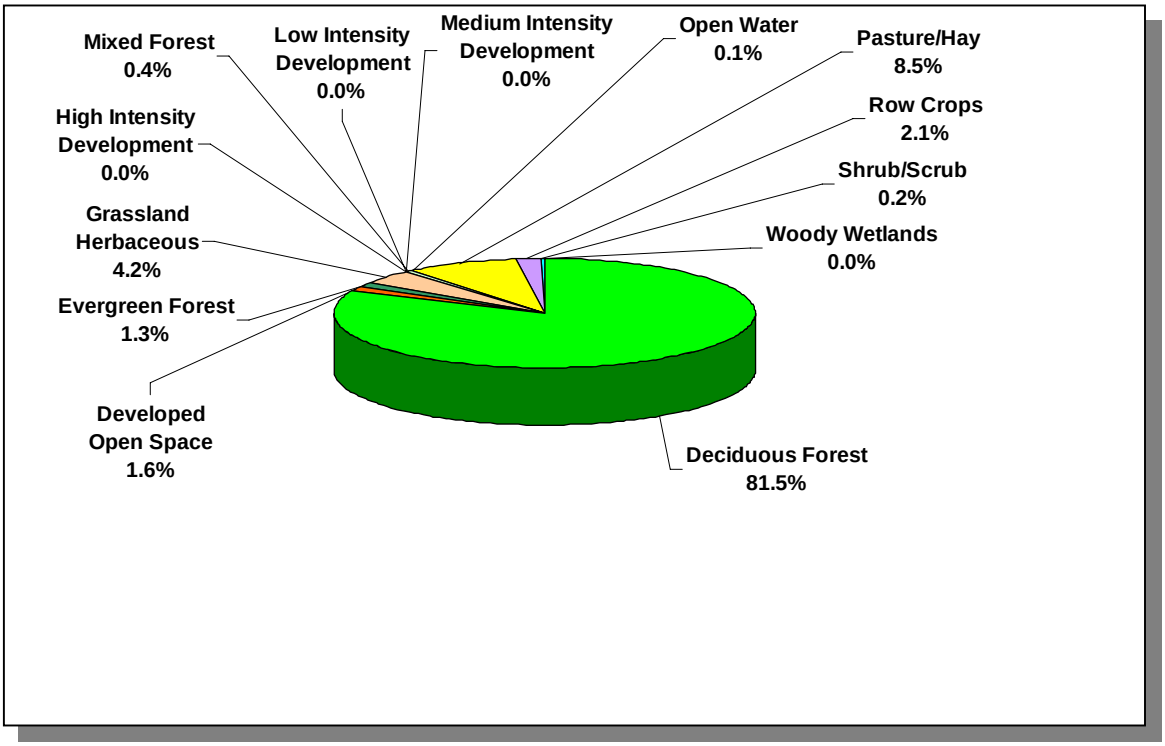

Figure 4-37. Land Use Distribution in Subwatershed 051301060105. *More information is provided in Appendix IV.*

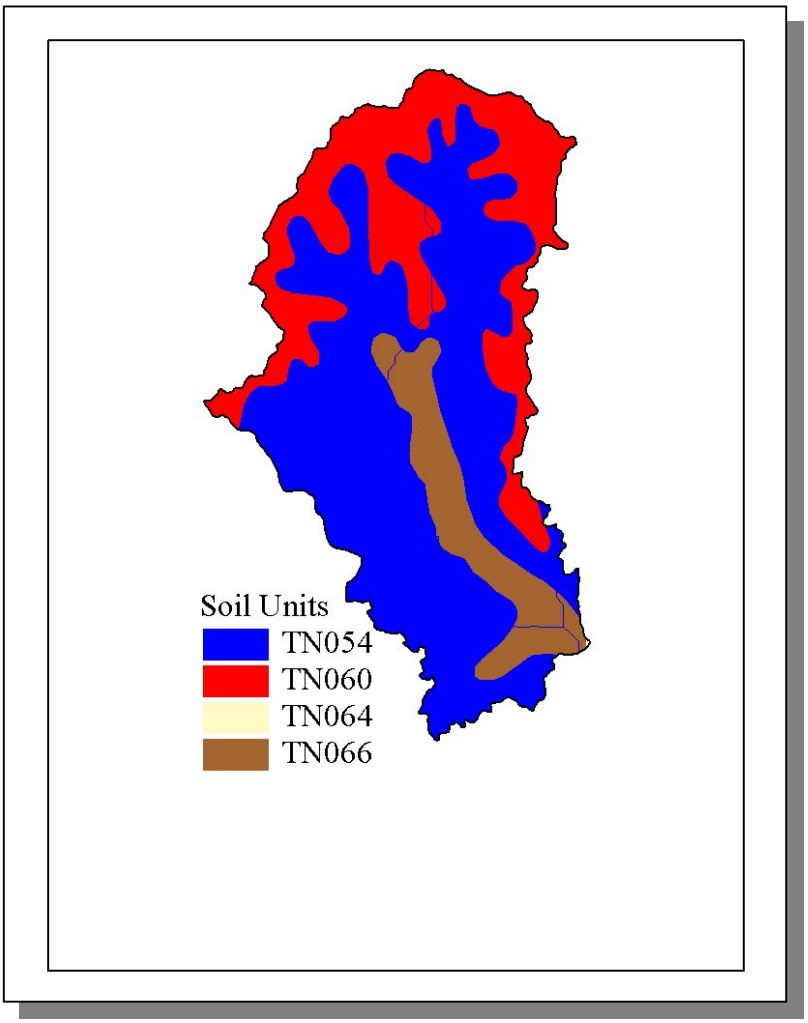

Figure 4-38. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060105.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28

Table 4-28. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060105. *The definition of "Hydrologic Group" is provided in Appendix IV.*

.

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Clay	7,238	7,311	7,976	9.32	674	681	743	10.2
Jackson	9,297	9,537	10,984	1.08	100	103	118	18.0
Total	**16,535**	**16,848**	**18,960**		**774**	**784**	**861**	**11.2**

Table 4-29. Population Estimates in Subwatershed 051301060105.

Figure 4-39. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060105. *More information, including site names and locations, is provided in Appendix IV.*

4.2.A.v.a. Point Source Contributions.

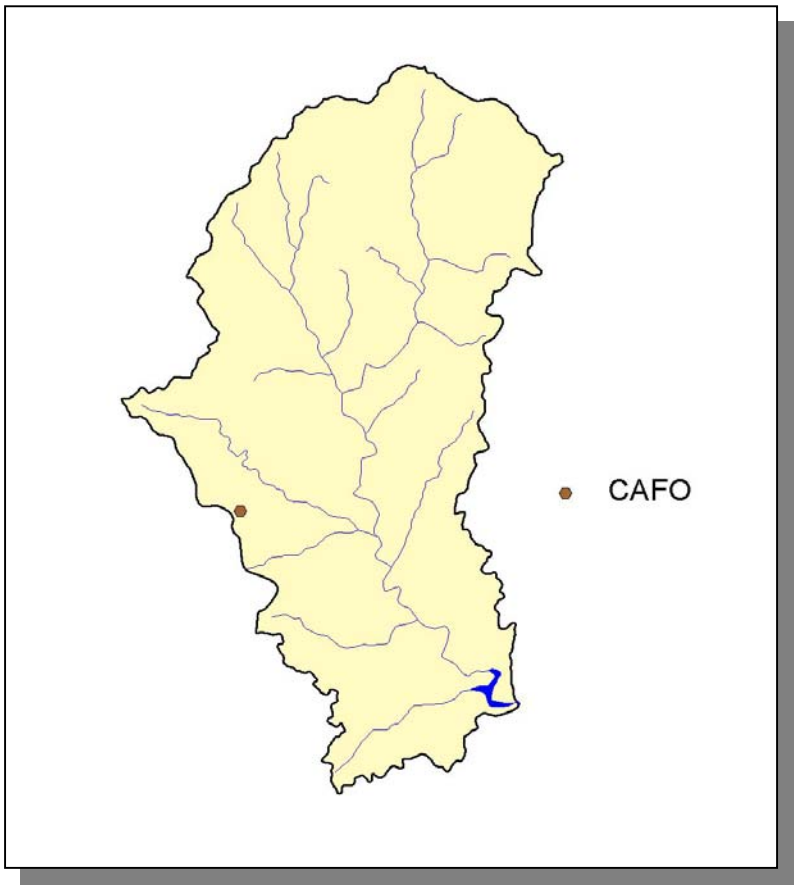

Figure 4-40. Location of Permits Issued in Subwatershed 051301060105. *More information, including the names of facilities, is provided in Appendix IV.*

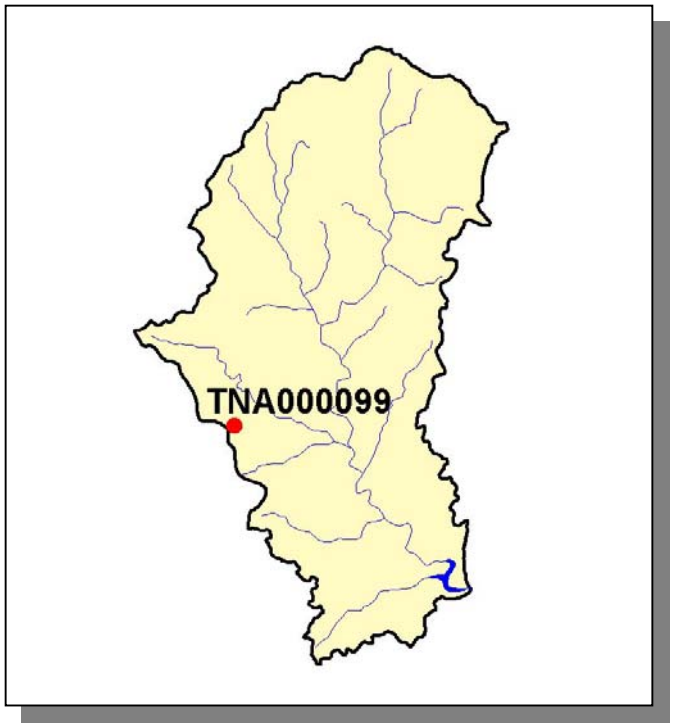

Figure 4-41. Location of Concentrated Animal Feeding Operations (CAFO) in Subwatershed 051301060105. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.A.v.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS			
Cattle	Chickens (Layers)	Hogs	Sheep
1,385	<5	17	<5

Table 4-30. Summary of Livestock Count Estimates in Subwatershed 051301060105. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Clay	0	14,574	0	18	174	23
Jackson	6,962	12,086	10	727	403	39

Table 4-31. Summary of Livestock Count Estimates in Clay and Jackson Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Clay	105.1	105.1	2.3	10.1
Jackson	135.9	135.9	0.9	5.1

Table 4-32. Forest Acreage and Annual Removal Rates (1987-1994) in Clay and Jackson Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	1.28
Grass (Hayland)	0.40
Legumes (Hayland)	0.17
Legumes, Grass (Hayland)	0.53
Grass, Forbs, Legumes (Mixed Pasture)	1.46
Corn (Row Crops)	21.43
Tobacco (Row Crops)	28.52
Farmsteads and Ranch Headquarters	1.53

Table 4-33. Annual Estimated Total Soil Loss in Subwatershed 051301060105.

4.2.B. 0513010602.

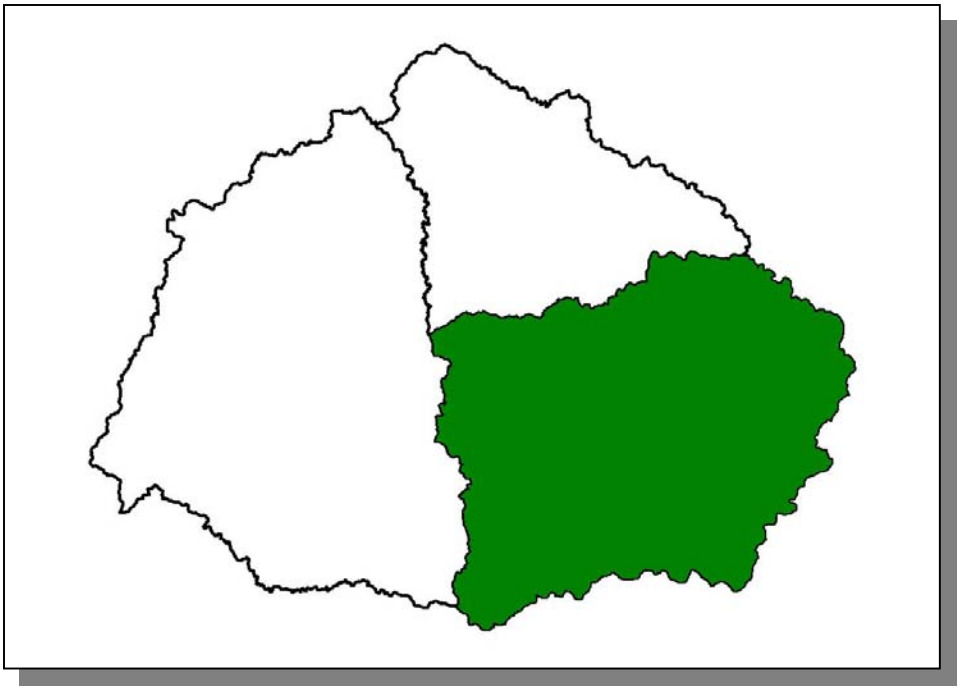

Figure 4-42. Location of Subwatershed 0513010602. *All Cordell Hull Lake HUC-10 subwatershed boundaries are shown for reference.*

4.2.B.i. 051301060201 (Roaring River).

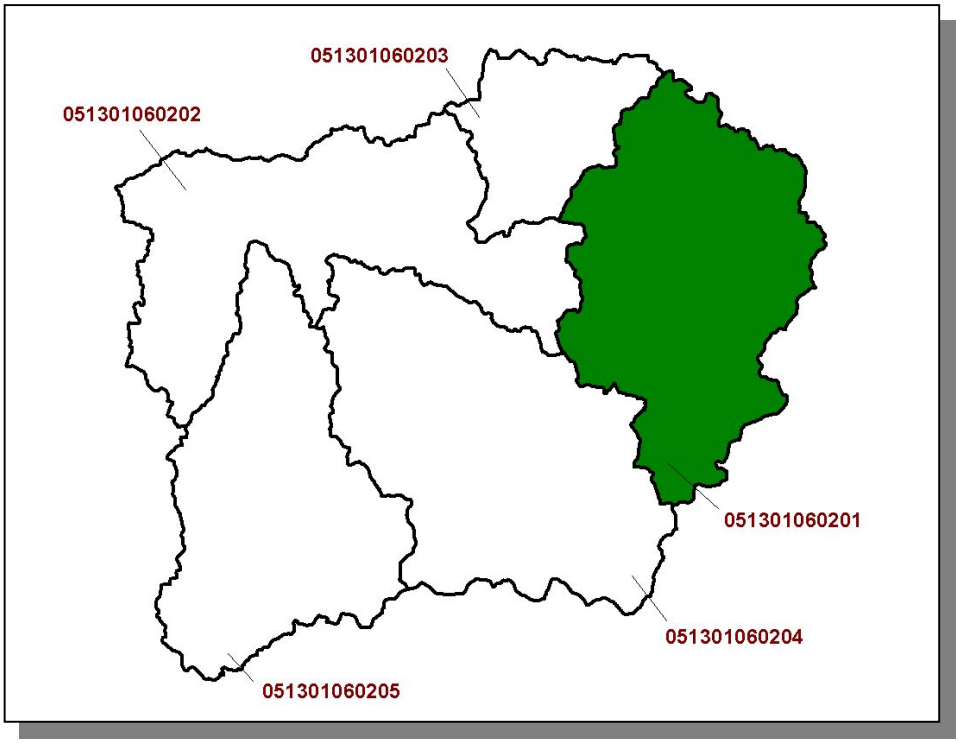

Figure 4-43. Location of Subwatershed 051301060201. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

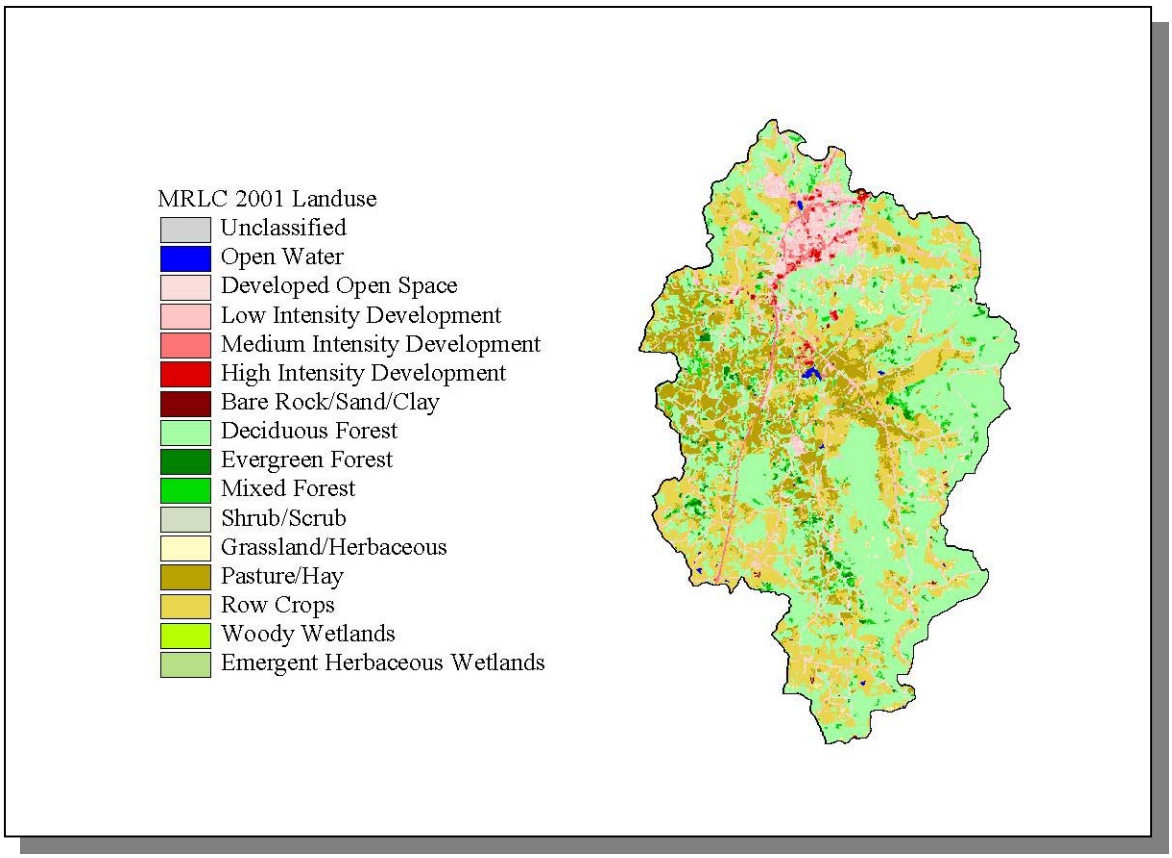

Figure 4-44. Illustration of Land Use Distribution in Subwatershed 051301060201.

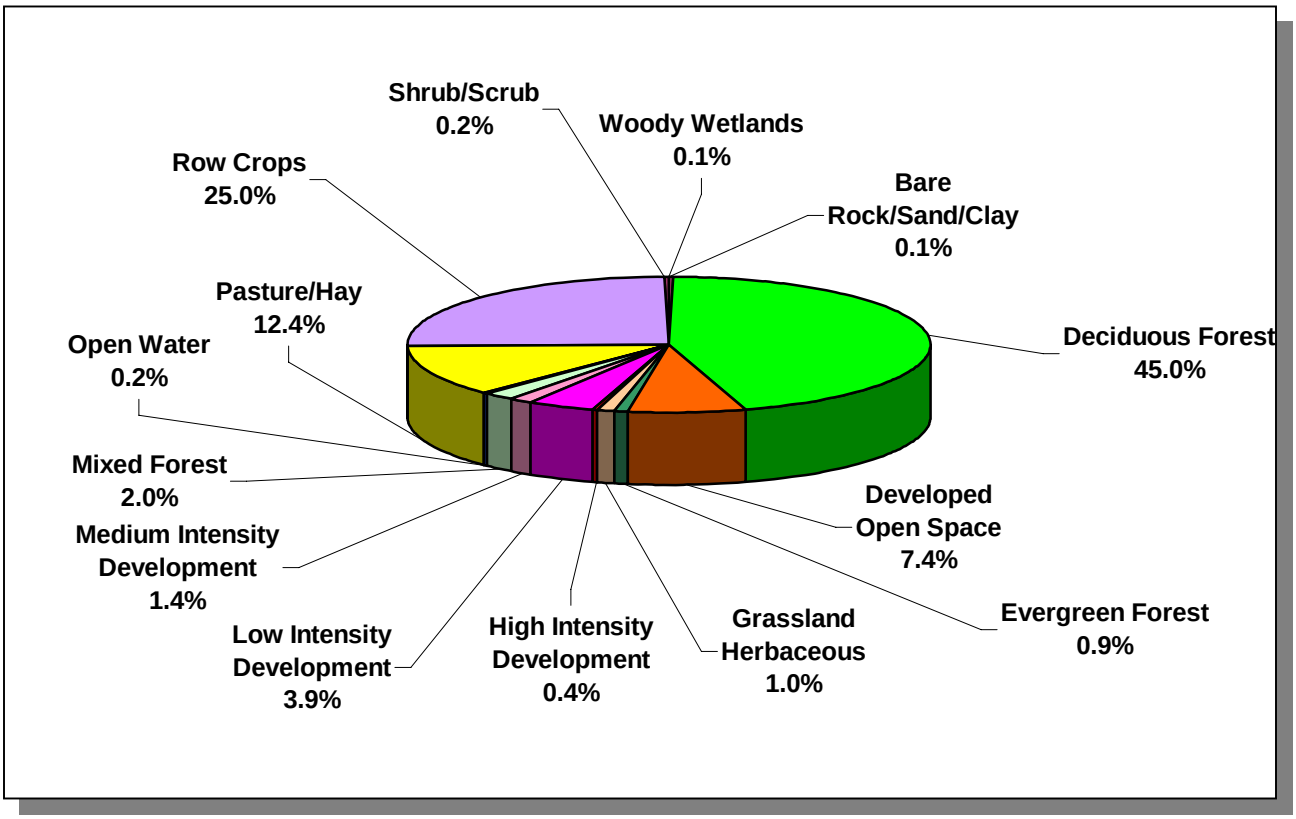

Figure 4-45. Land Use Distribution in Subwatershed 051301060201. *More information is provided in Appendix IV.*

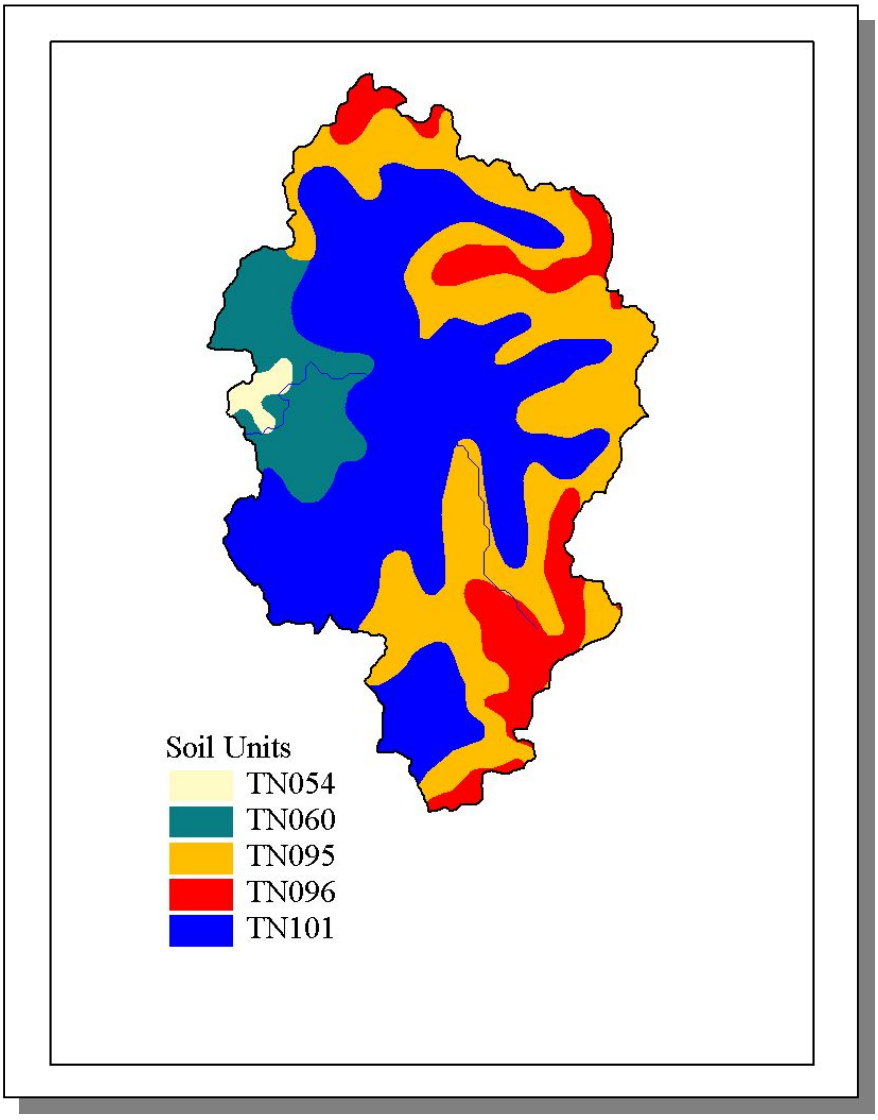

Figure 4-46. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060201.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN095	0.00	B	2.35	5.12	Loam	0.31
TN096	10.00	C	1.22	5.16	Silty Loam	0.38
TN101	0.00	B	1.71	5.39	Loam	0.35

Table 4-34. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060201. *The definition of "Hydrologic Group" is provided in Appendix IV.*

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	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Overton	17,636	19,171	20,118	16.2	2,858	3,107	3,260	14.1

Table 4-35. Population Estimates in Subwatershed 051301060201.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Livingston	Overton	3,809	1,679	1,298	344	37

Table 4-36. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051301060201.

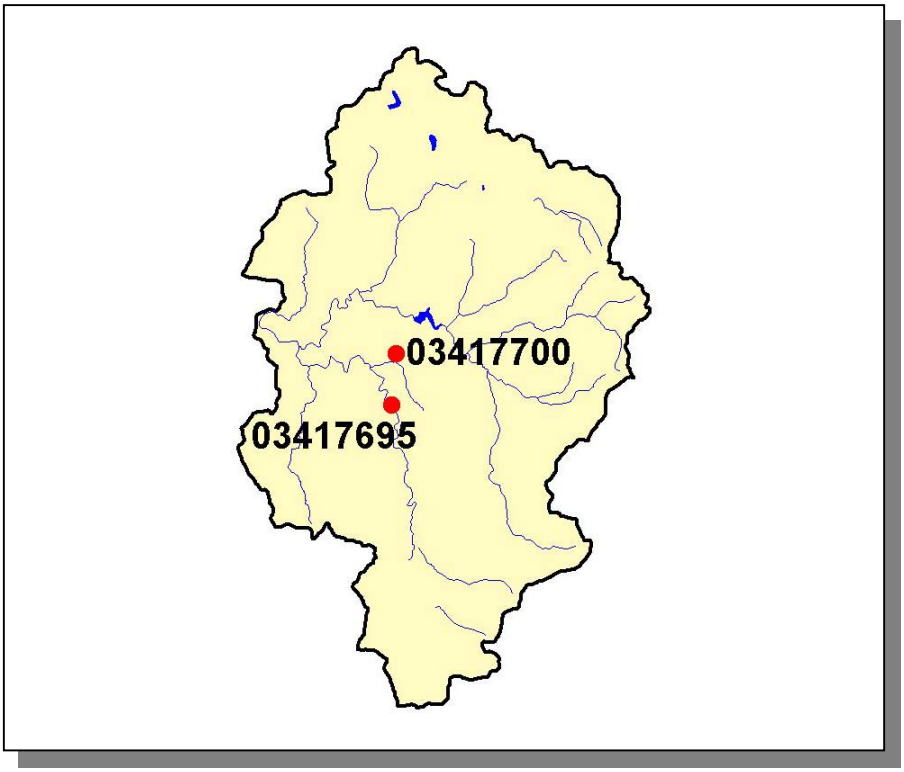

Figure 4-47. Location of Historical Streamflow Data Collection Sites in Subwatershed 051301060201. *More information is provided in Appendix IV.*

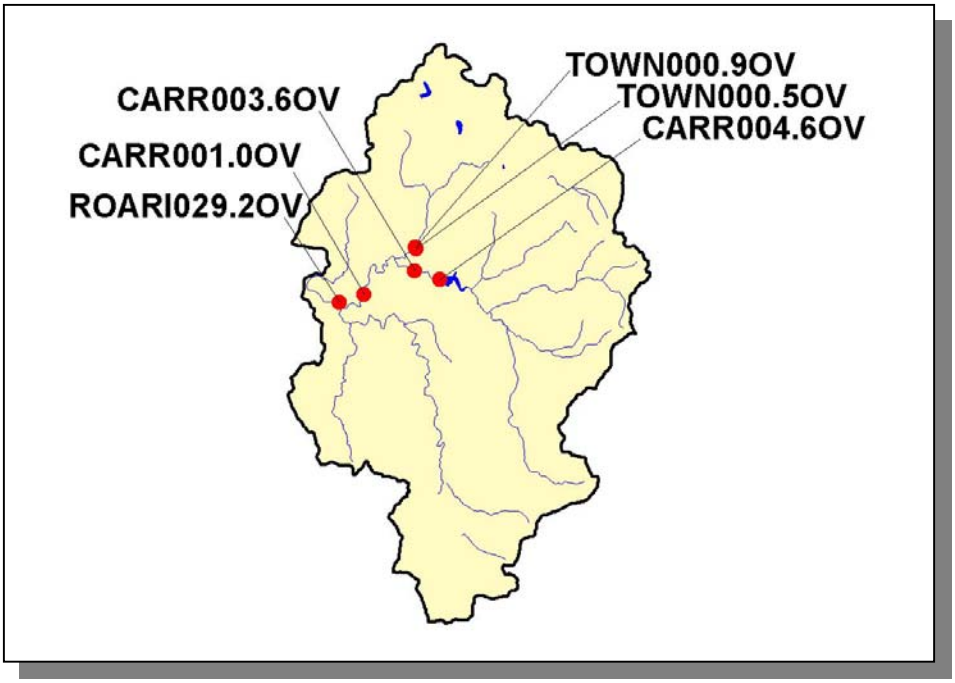

Figure 4-48. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060201. *More information, including site names and locations, is provided in Appendix IV.*

4.2.B.i.a. Point Source Contributions.

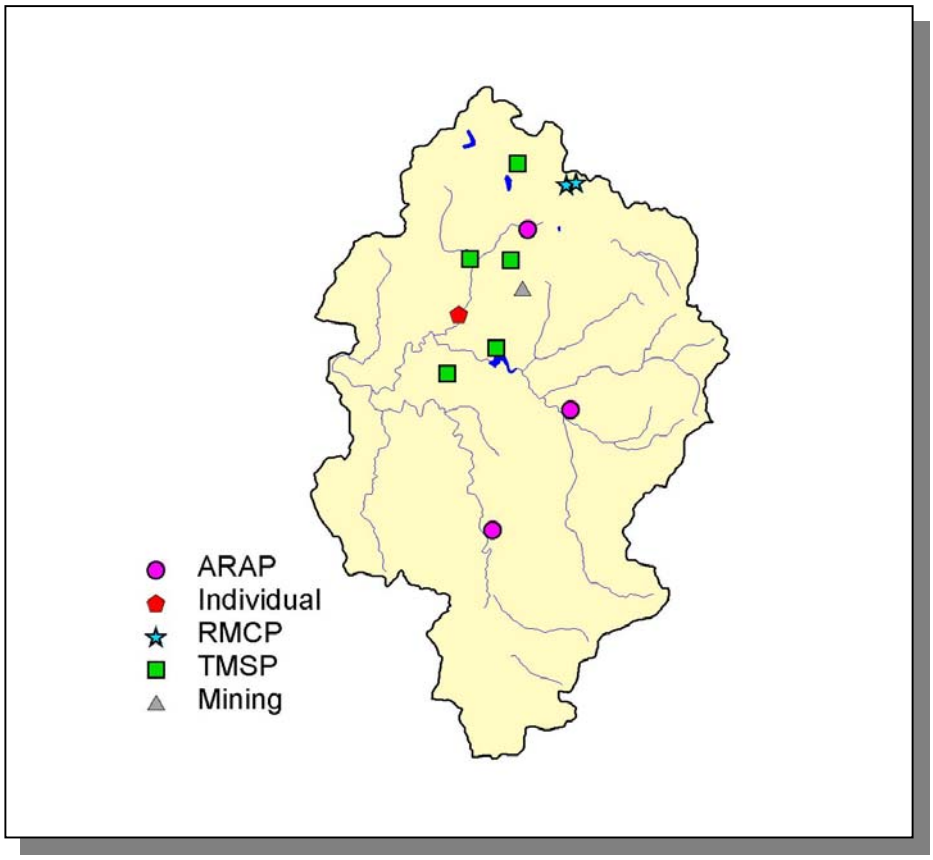

Figure 4-49. Location of Permits Issued in Subwatershed 051301060201. *More information, including the names of facilities, is provided in Appendix IV.*

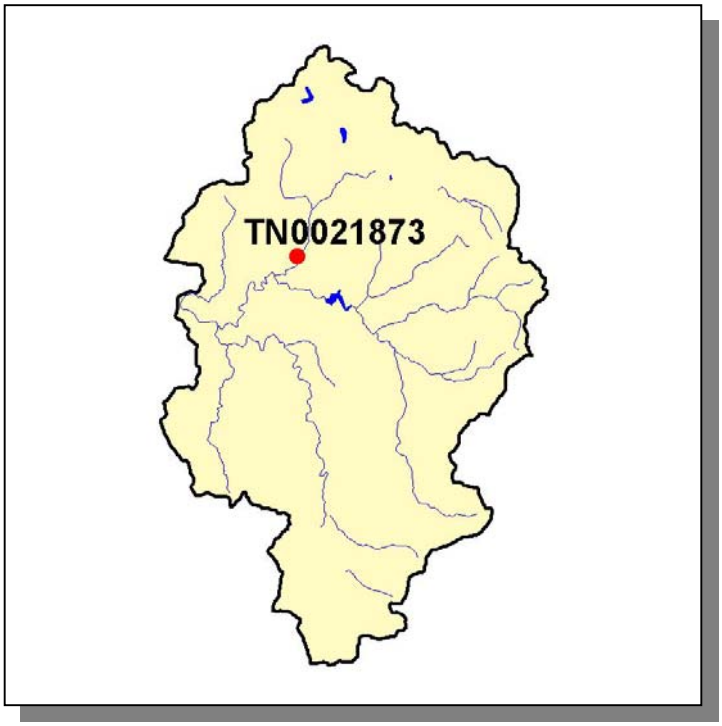

Figure 4-50. Location of Active NPDES Sites in Subwatershed 051301060201. *More information, including the names of facilities, is provided in Appendix IV.*

Figure 4-51. Location of Active Mining Sites in Subwatershed 051301060201. *More information, including the names of mining operations, is provided in Appendix IV.*

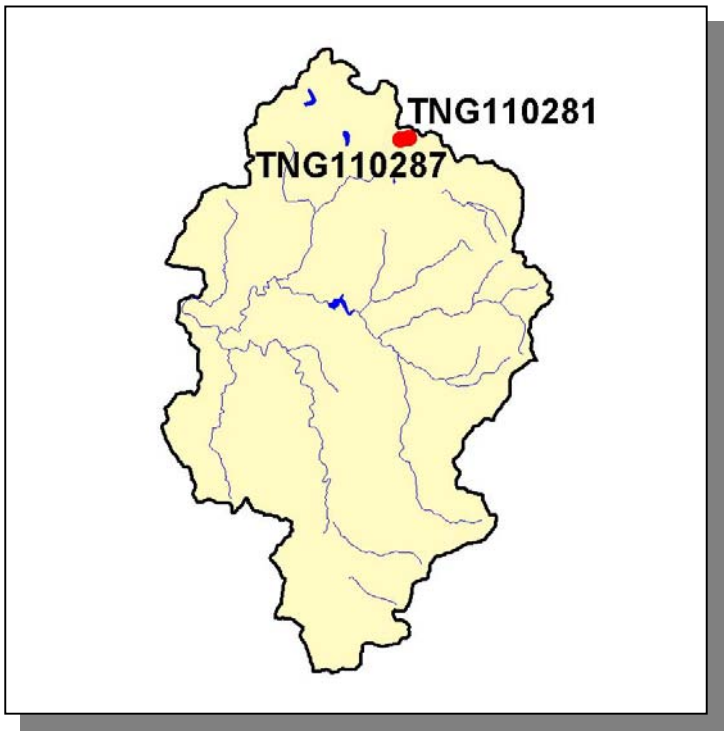

Figure 4-52. Location of Ready Mix Concrete Plants (RMCP) in Subwatershed 051301060201. *More information is provided in Appendix IV.*

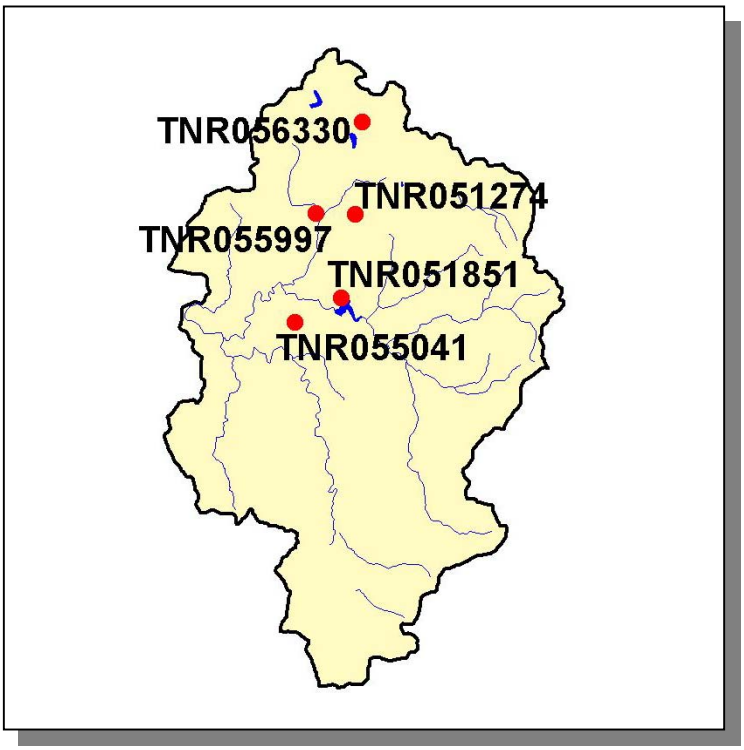

Figure 4-53. Location of TMSP Sites in Subwatershed 051301060201. *More information, including the names of facilities, is provided in Appendix IV.*

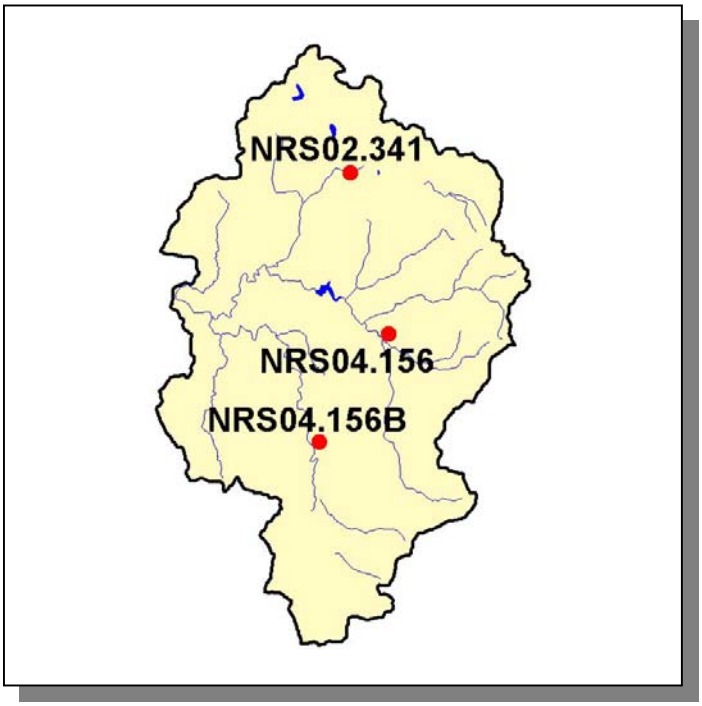

Figure 4-54. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 051301060201. *More information is provided in Appendix IV.*

4.2.B.i.a.i. Dischargers to Water Bodies Listed on the 2004 303(d) List

There is one NPDES facility discharging to water bodies listed on the 2004 303(d) list in Subwatershed 051302010201:

- TN0021873 (Livingston STP) discharges to Town Creek @ RM 0.8

Figure 4-55. Location of NPDES Dischargers to Water Bodies Listed on the 2004 303(d) List in Subwatershed 051301060201. *More information, including the names of facilities, is provided in Appendix IV.*

PERMIT #	1Q10	3Q10	7Q10	3Q20	QDESIGN
TN0021873			0.45		

Table 4-37. Receiving Stream Flow Information for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 051301060201. *Data are in million gallons per day (MGD). Data were obtained from the USGS publication Flow Duration and Low Flows of Tennessee Streams Through 1992 or from permit files.*

PERMIT #	Zn	Cu	Pb	Ni	Cd	Mo	As	Se	Flow
TN0021873	X	X	X	X	X	X	X	X	X

Table 4-38. Monitoring Requirements for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 051301060201.

PERMIT #	WET	$CBOD_5$	NH_3	TRC	TSS	SETTLEABLE SOLIDS	DO	pH	Hg
TN0021873	X	X	X	X	X	X	X	X	X

Table 4-39. Parameters Monitored for Daily Maximum Limits for NPDES Dischargers to Waterbodies Listed on the 2004 303(d) List in Subwatershed 051301060201. *WET, Whole Effluent Toxicity; $CBOD_5$, Carbonaceous Biochemical Oxygen Demand (5-Day); TRC, Total Residual Chlorine; TSS, Total Suspended Solids.*

4.2.B.i.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
4,006	7,354	317	13	214	16

Table 4-40. Summary of Livestock Count Estimates in Subwatershed 051301060201. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Overton	15,150	27,812	1,200	1,173	811	59
Putnam	12,592	24,817	1,095	1,025	1,070	66

Table 4-41. Summary of Livestock Count Estimates in Overton and Putnam Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Overton	170.3	170.3	1.7	7.0
Putnam	152.5	152.5	3.6	16.4

Table 4-42. Forest Acreage and Annual Removal Rates (1987-1994) in Overton and Putnam Counties.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.26
Grass (Hayland)	0.31
Legumes (Hayland)	0.23
Legumes, Grass (Hayland)	2.89
Grass, Forbs, Legumes (Mixed Pasture)	0.67
Corn (Row Crops)	4.35
Soybeans (Row Crops)	10.79
Tobacco (Row Crops)	12.38
Wheat (Close-Grown Cropland)	7.00
Other Vegetable and Truck Crops	21.46
Conservation Reserve Program Lands	0.46
Farmsteads and Ranch Headquarters	0.58

Table 4-43. Annual Estimated Total Soil Loss in Subwatershed 051301060201.

4.2.B.ii. 051301060202 (Roaring River).

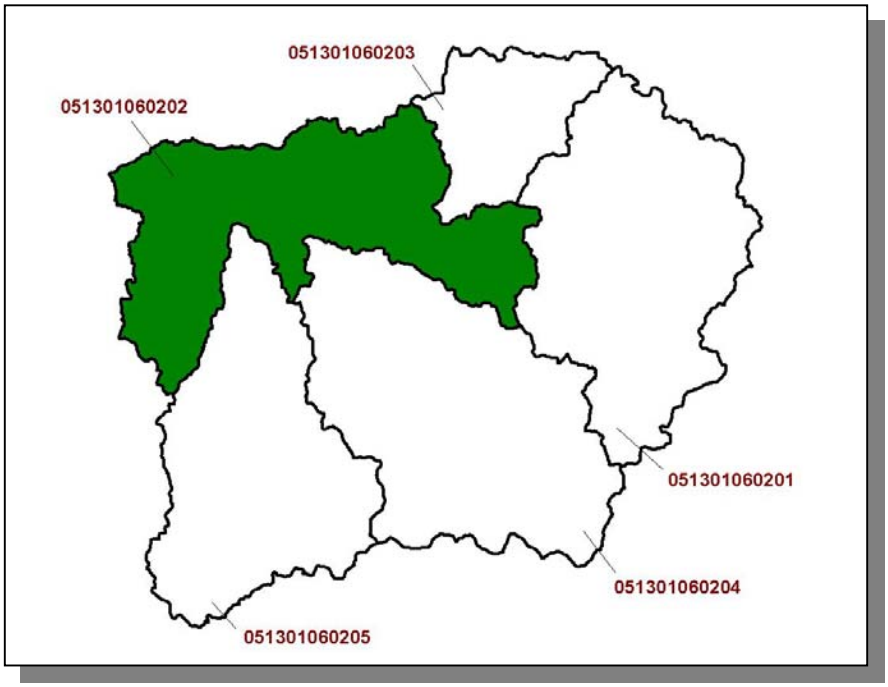

Figure 4-56. Location of Subwatershed 051301060202. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

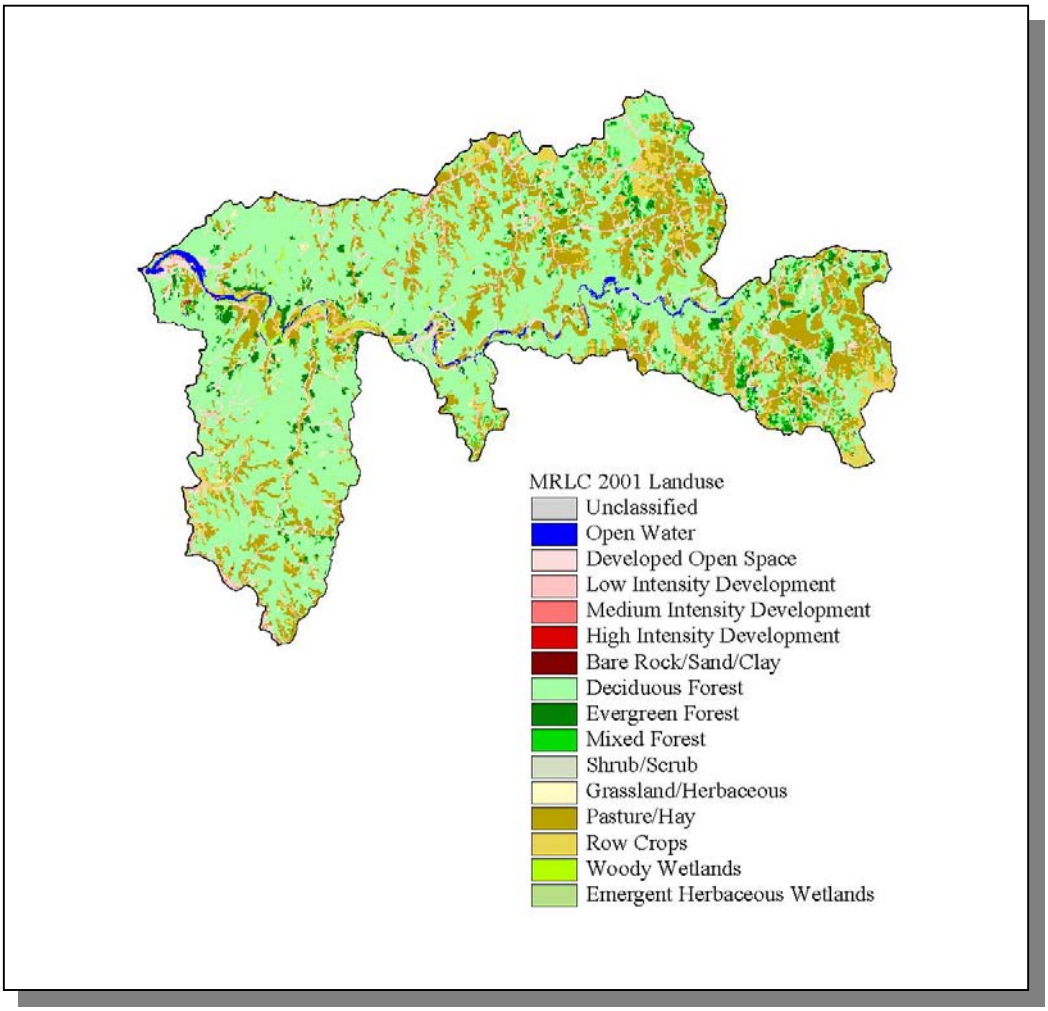

Figure 4-57. Illustration of Land Use Distribution in Subwatershed 051301060202.

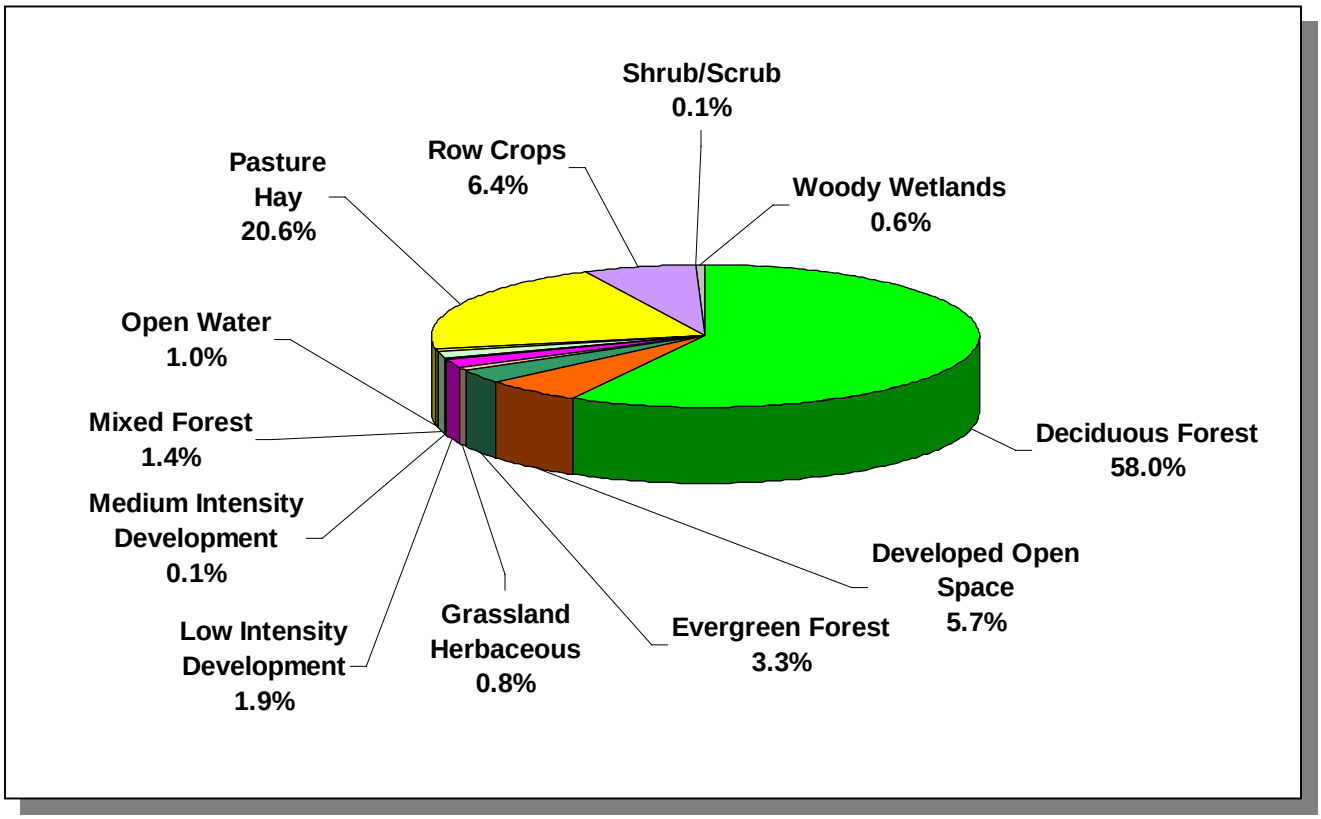

Figure 4-58. Land Use Distribution in Subwatershed 051301060202. *More information is provided in Appendix IV.*

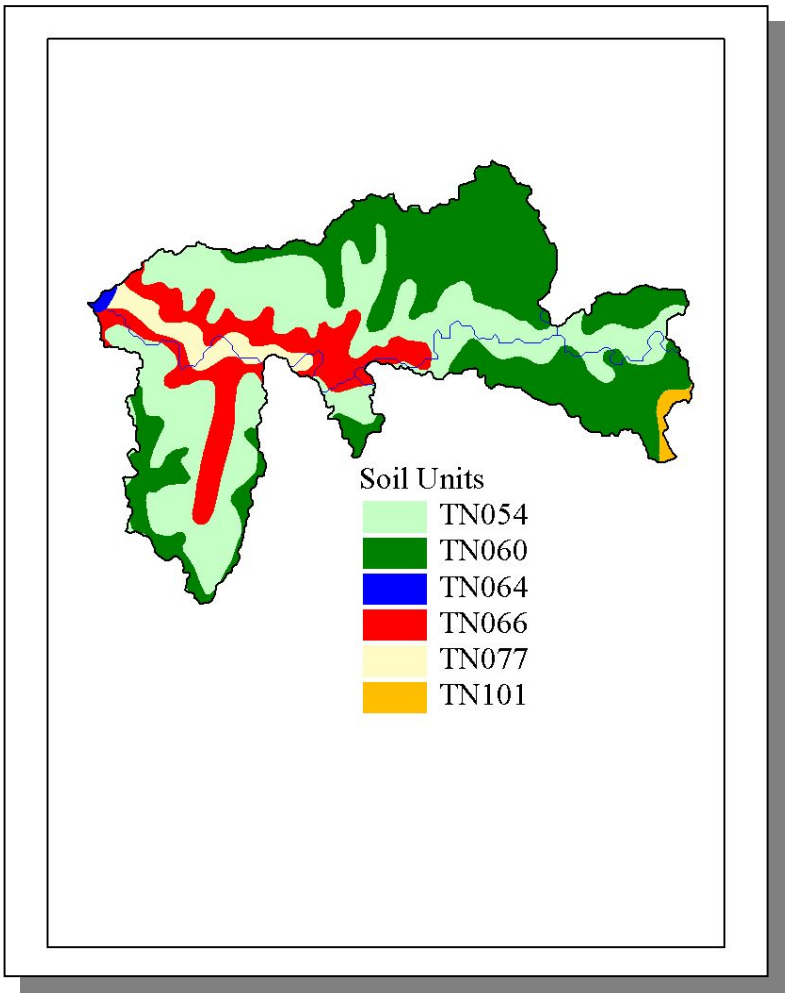

Figure 4-59. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060202.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28
TN077	4.00	C	216	5.03	Loam	0.34
TN101	0.00	B	1.71	5.39	Loam	0.35

Table 4-44. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060202. *The definition of "Hydrologic Group" is provided in Appendix IV.*

.

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Jackson	9,279	9,537	10,984	13.84	1,287	1,320	1,520	18.1
Overton	17,636	19,171	20,118	5.34	942	1,024	1,074	14.0
Total	**26,933**	**28,708**	**31,102**		**2,229**	**2,344**	**2,594**	**16.4**

Table 4-45. Population Estimates in Subwatershed 051301010202.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Gainesboro	Jackson	1,002	495	411	82	2

Table 4-46. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051301060202.

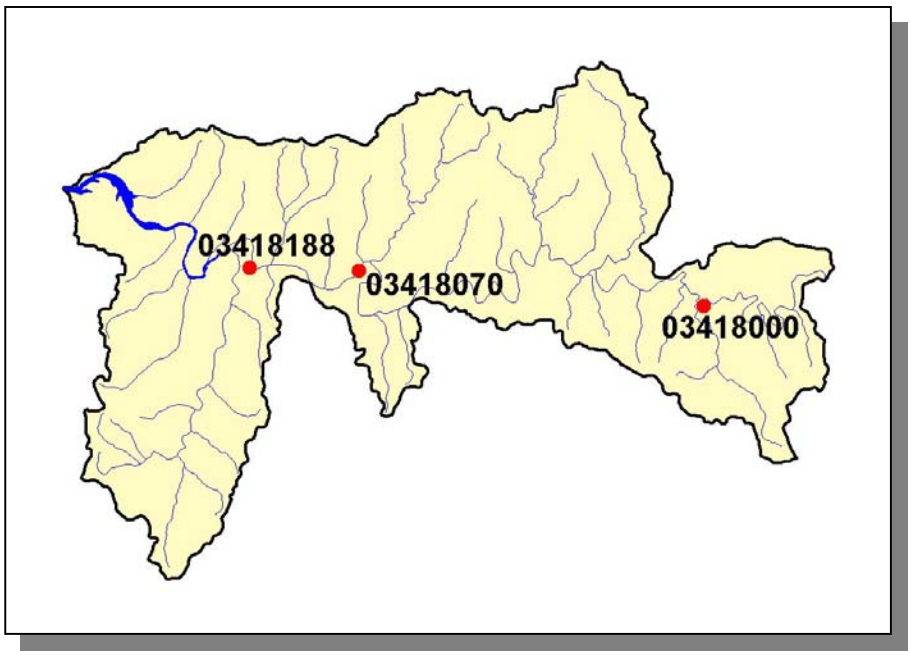

Figure 4-60. Location of Historical Streamflow Data Collection Sites in Subwatershed 051301060202. *More information is provided in Appendix IV.*

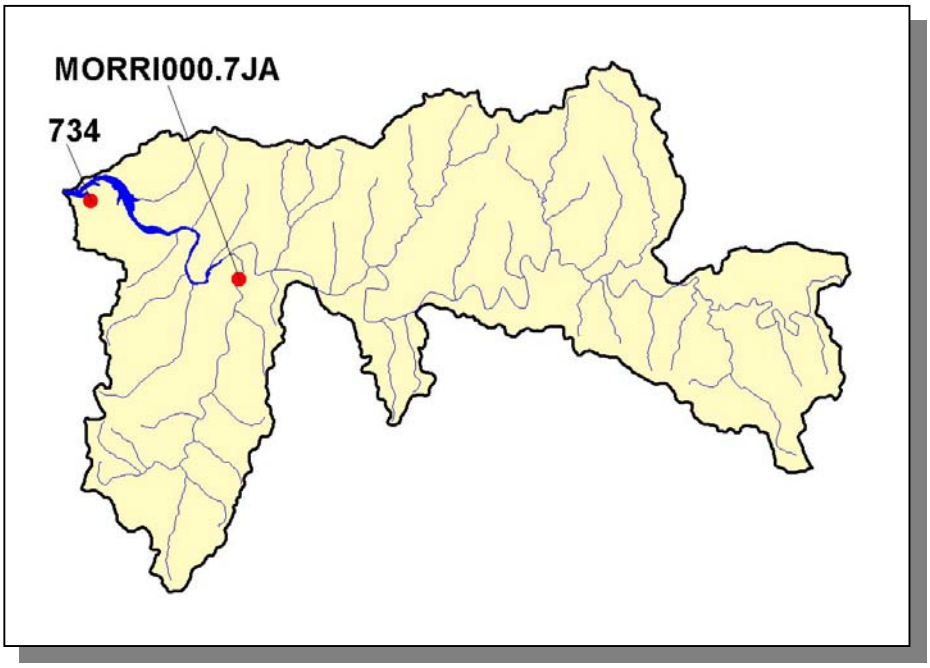

Figure 4-61. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060202. *More information, including site names and locations, is provided in Appendix IV.*

4.2.B.ii.a. Point Source Contributions.

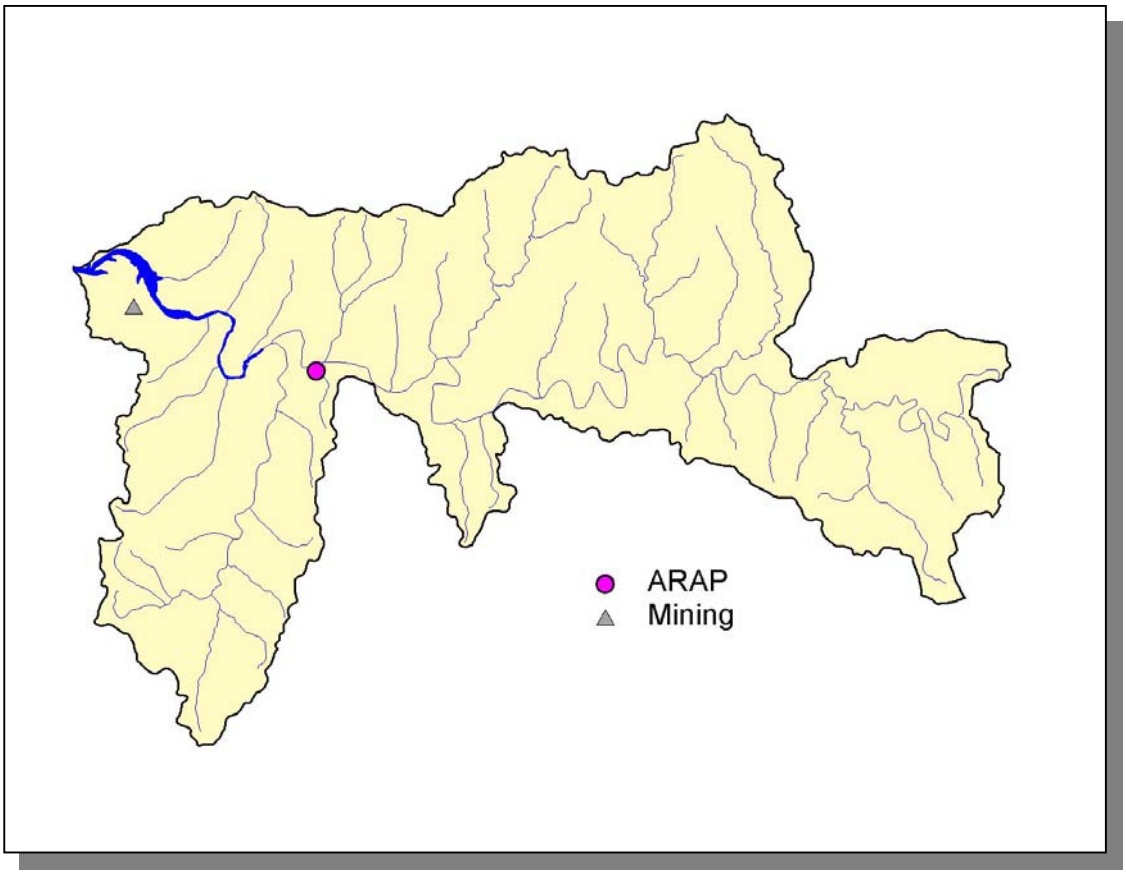

Figure 4-62. Location of Permits Issued in Subwatershed 051301060202. *More information, including the names of facilities, is provided in Appendix IV.*

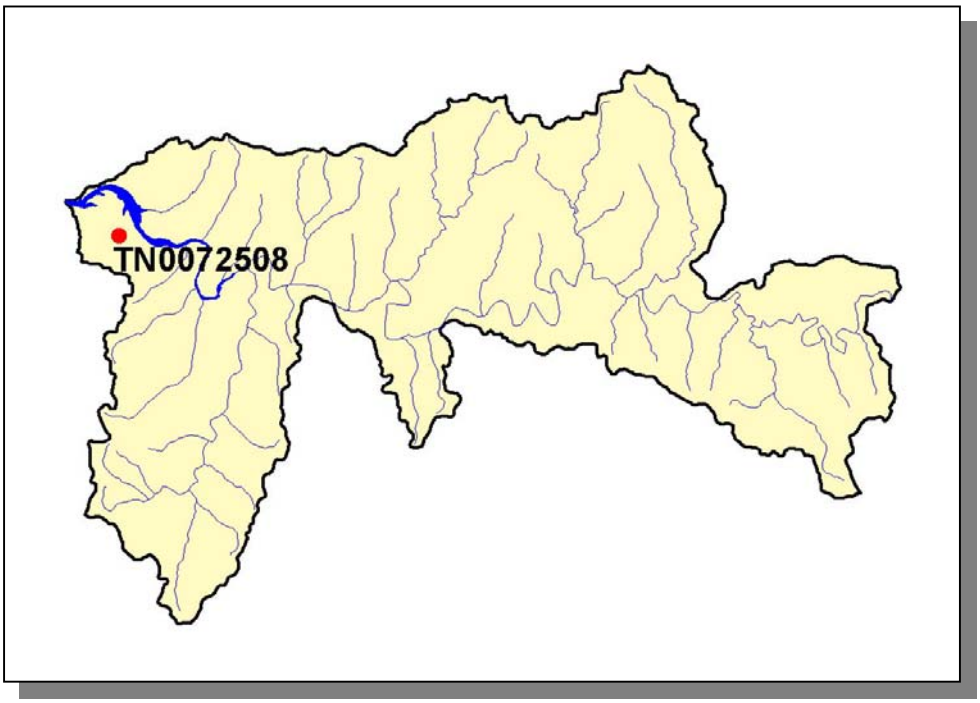

Figure 4-63. Location of Active Mining Sites in Subwatershed 051301060202. *More information, including the names of mining operations, is provided in Appendix IV.*

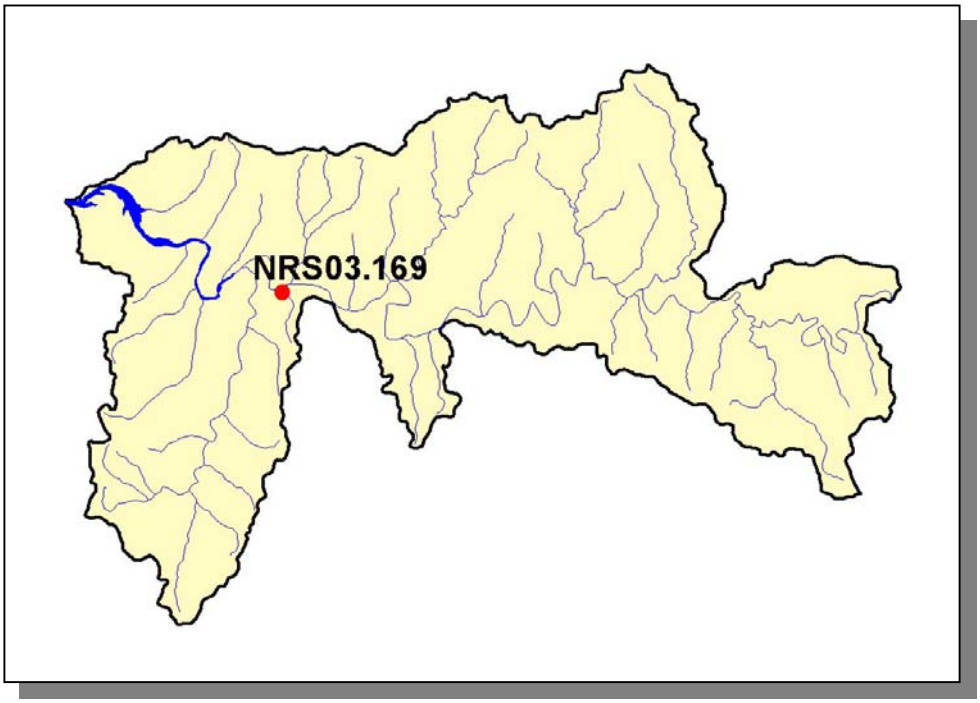

Figure 4-64. Location of Aquatic Alteration Resource Permits Sites in Subwatershed 051301060202. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.B.ii.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
2,356	4,214	100	9	131	11

Table 4-47. Summary of Livestock Count Estimates in Subwatershed 051301060202. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jackson	6,962	12,086	10	727	403	39
Overton	15,150	27,812	1,200	1,173	811	59

Table 4-48. Summary of Livestock Count Estimates in Jackson and Overton Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jackson	135.9	135.9	0.9	5.1
Overton	170.3	170.3	1.7	7.0

Table 4-49. Forest Acreage and Annual Removal Rates (1987-1994) in Jackson and Overton Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	1.56
Grass (Hayland)	0.31
Legumes (Hayland)	0.17
Legumes, Grass (Hayland)	2.89
Grass, Forbs, Legumes (Mixed Pasture)	1.53
Corn (Row Crops)	15.54
Soybeans (Row Crops)	10.79
Wheat (Close-Grown Cropland)	7.00
Other Vegetable and Truck Crops	21.46
Conservation Reserve Program Lands	0.46
Farmsteads and Ranch Headquarters	1.06

Table 4-50. Annual Estimated Total Soil Loss in Subwatershed 051301060202.

4.2.B.iii. 051301060203 (Flat Creek).

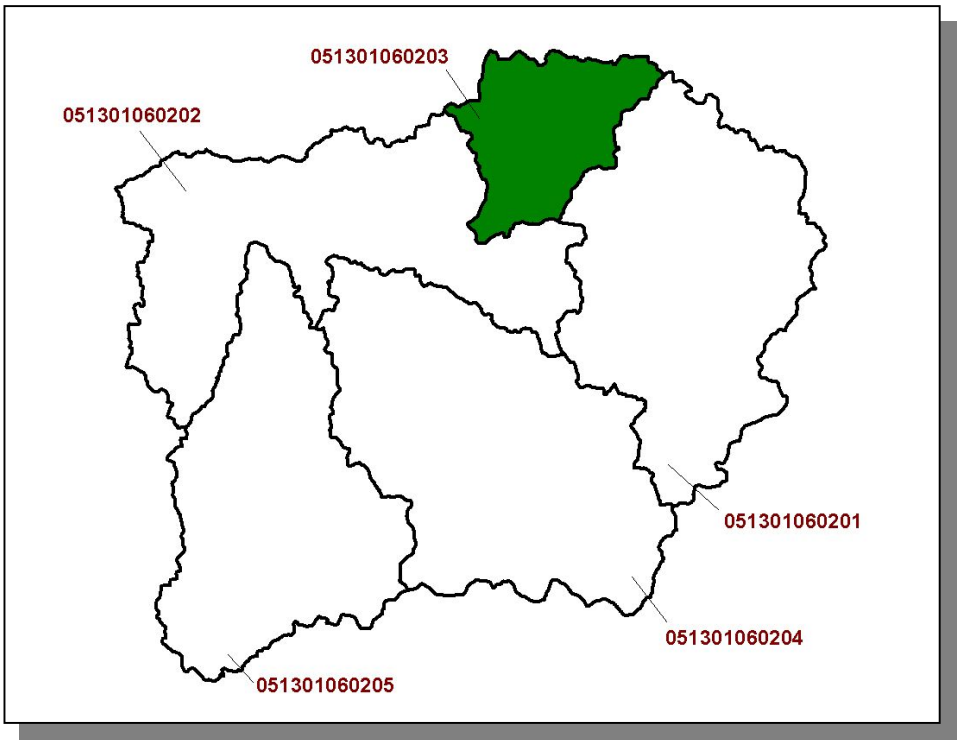

Figure 4-65. Location of Subwatershed 051301060203. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

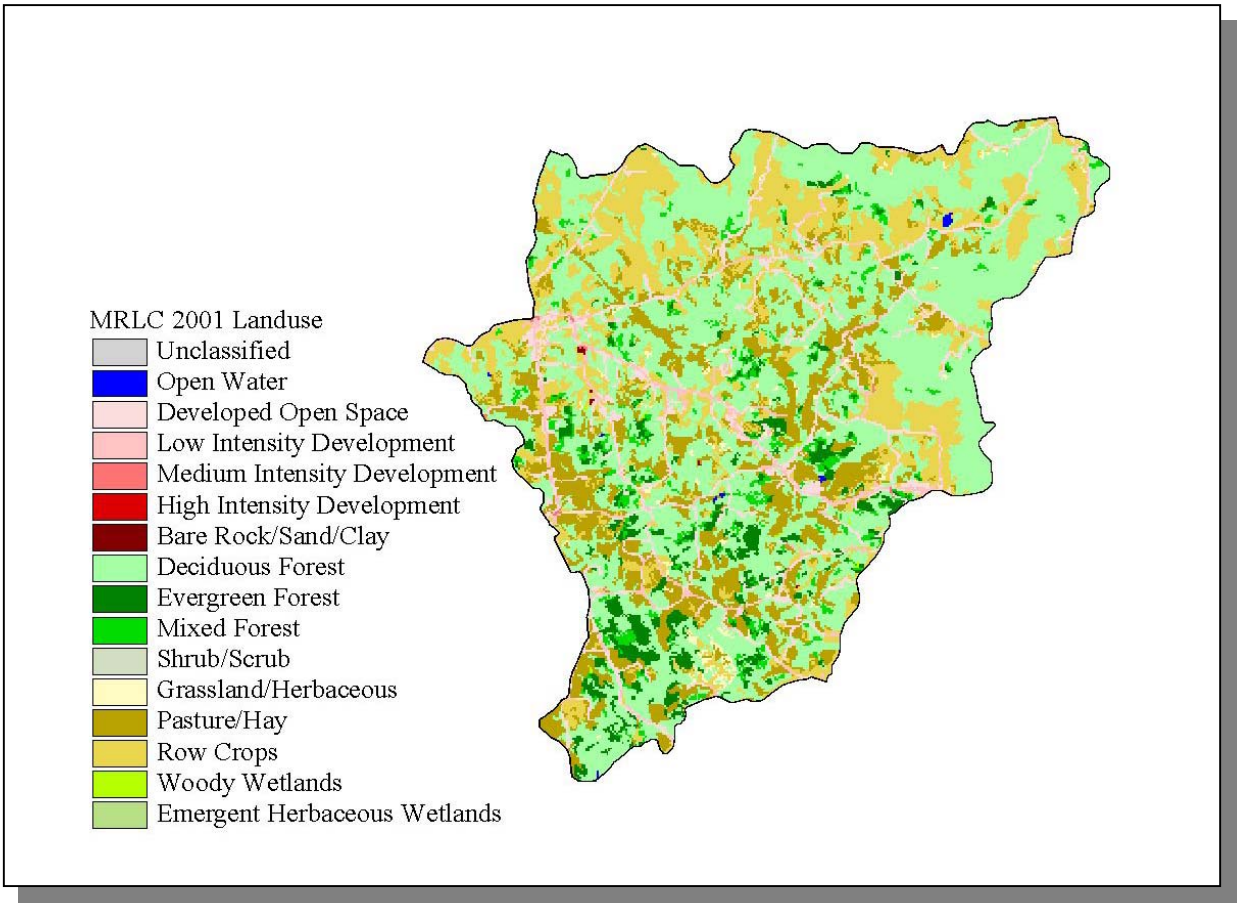

Figure 4-66. Illustration of Land Use Distribution in Subwatershed 051301060203.

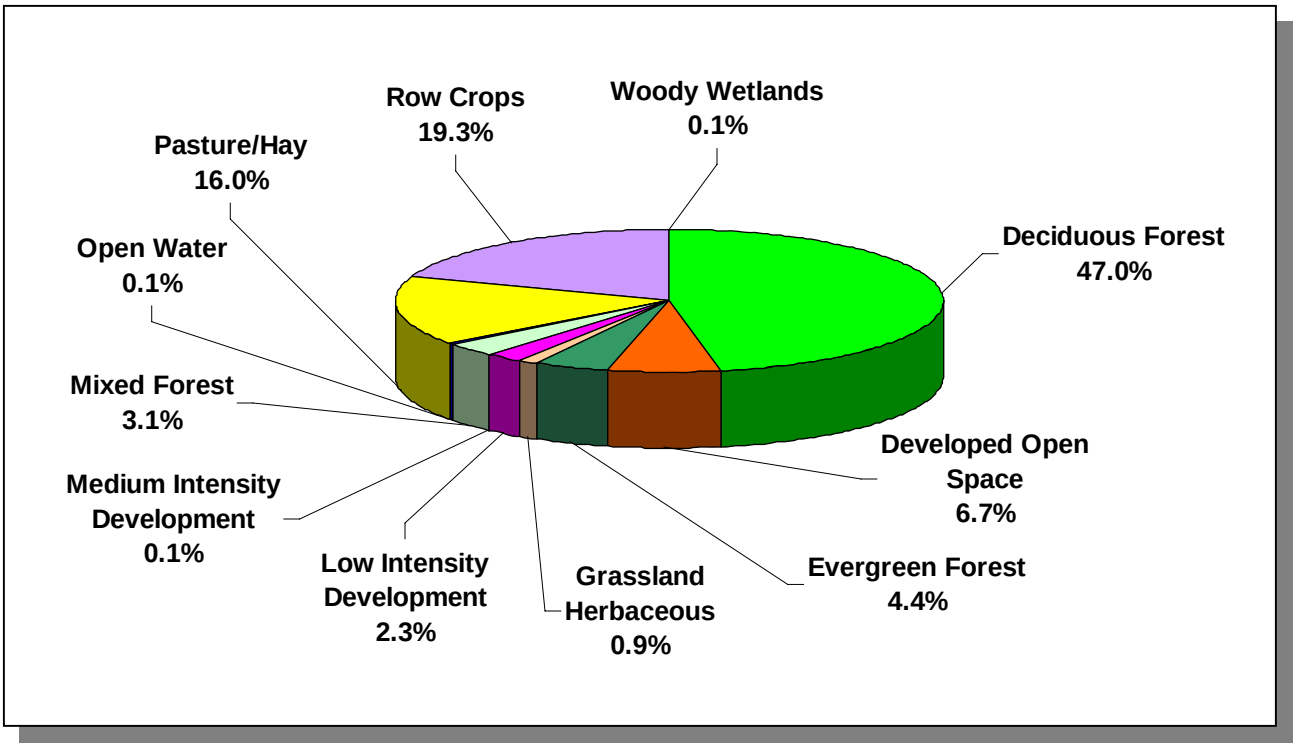

Figure 4-67. Land Use Distribution in Subwatershed 051301060203. *More information is provided in Appendix IV.*

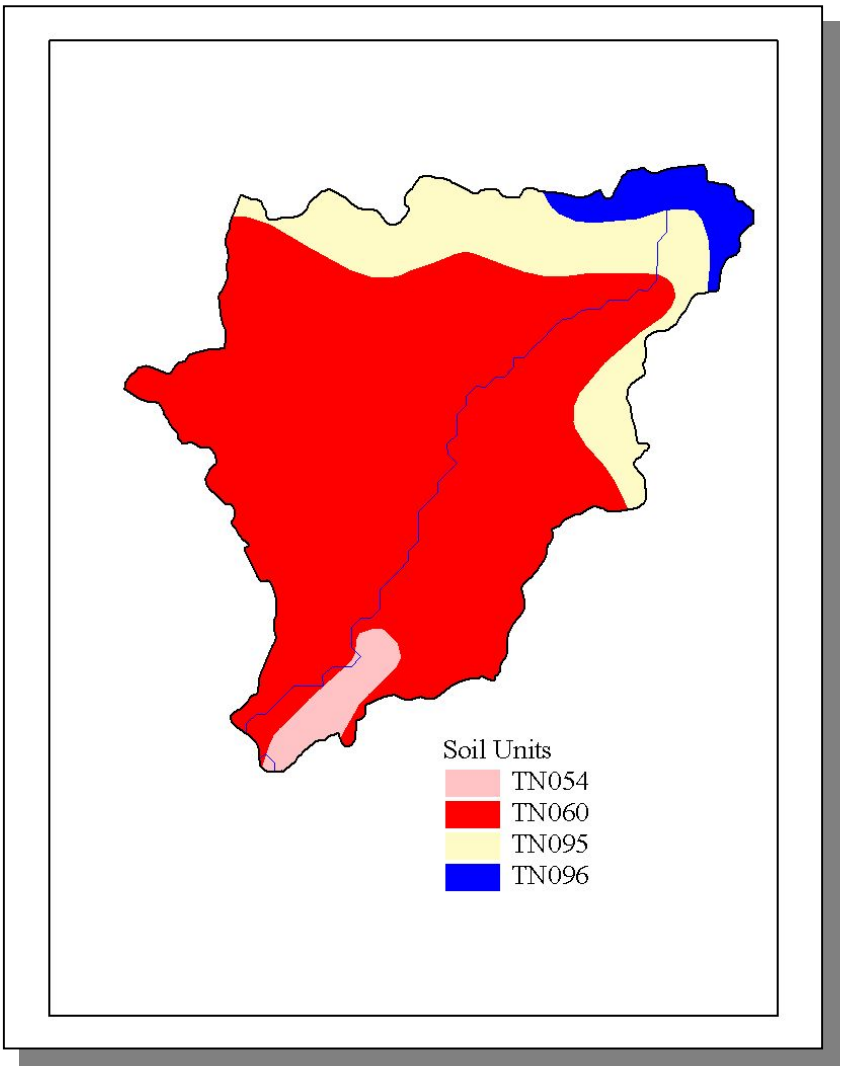

Figure 4-68. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060203.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN095	0.00	B	2.35	5.12	Loam	0.31
TN096	10.00	C	1.22	5.16	Silty Loam	0.38

Table 4-51. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060203. *The definition of "Hydrologic Group" is provided in Appendix IV.*

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	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Overton	17,636	19,171	20,118	5.38	950	1,032	1,083	14.0

Table 4-52. Population Estimates in Subwatershed 051301010203.

Figure 4-69. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060203. *More information, including site names and locations, is provided in Appendix IV.*

4.2.B.iii.a. Point Source Contributions.

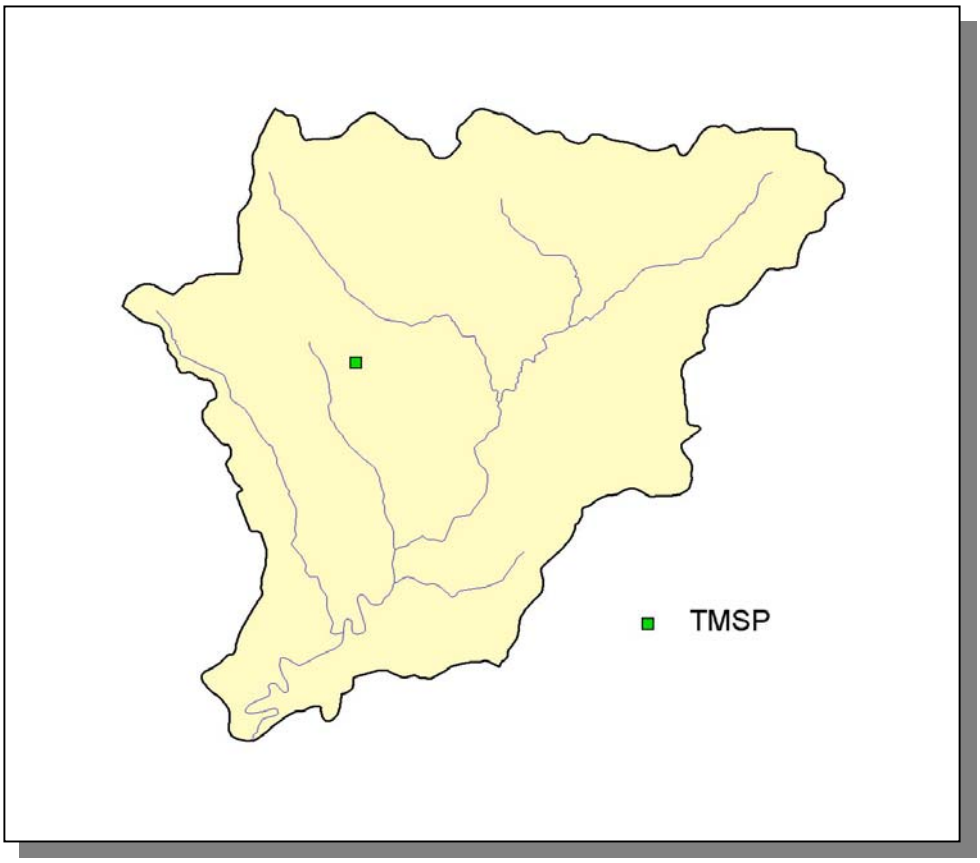

Figure 4-70. Location of Permits Issued in Subwatershed 051301060203. *More information, including the names of facilities, is provided in Appendix IV.*

Figure 4-71. Location of TMSP Sites in Subwatershed 051301060203. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.B.iii.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
1,099	2,018	87	<5	59	<5

Table 4-53. Summary of Livestock Count Estimates in Subwatershed 051301060203. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Overton	15,150	27,812	1,200	1,173	811	59

Table 4-54. Summary of Livestock Count Estimates in Overton County. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Overton	170.3	170.3	1.7	7.0

Table 4-55. Forest Acreage and Annual Removal Rates (1987-1994) in Overton County.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	0.26
Grass (Hayland)	0.31
Legumes, Grass (Hayland)	2.89
Grass, Forbs, Legumes (Mixed Pasture)	0.67
Corn (Row Crops)	4.35
Soybeans (Row Crops)	10.79
Wheat (Close-Grown Cropland)	7.00
Other Vegetable and Truck Crops	21.46
Conservation Reserve Program Lands	0.46
Farmsteads and Ranch Headquarters	0.58

Table 4-56. Annual Estimated Total Soil Loss in Subwatershed 051301060203.

4.2.B.iv. 051301060204 (Spring Creek).

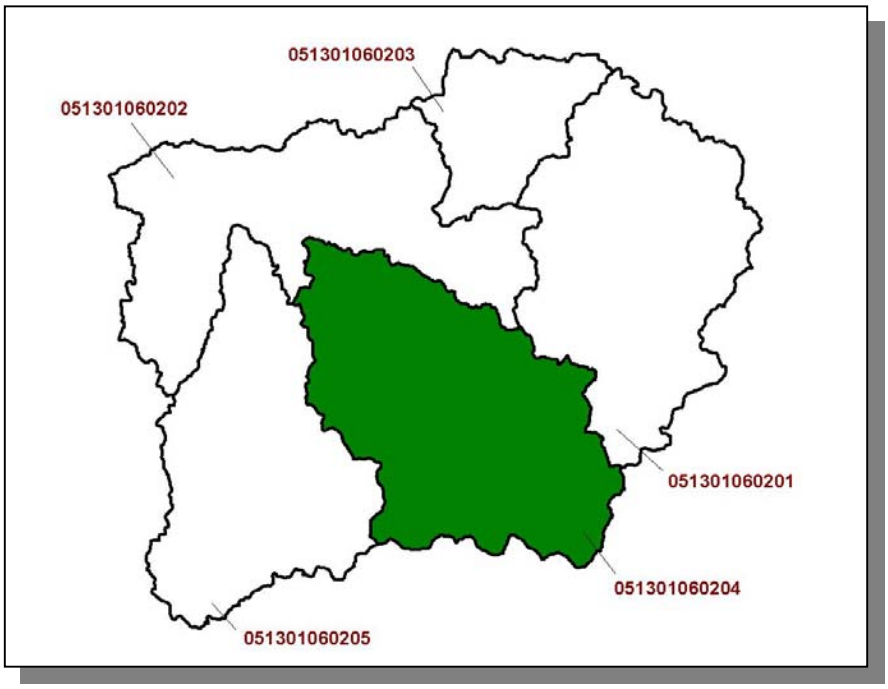

Figure 4-72. Location of Subwatershed 051301060204. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

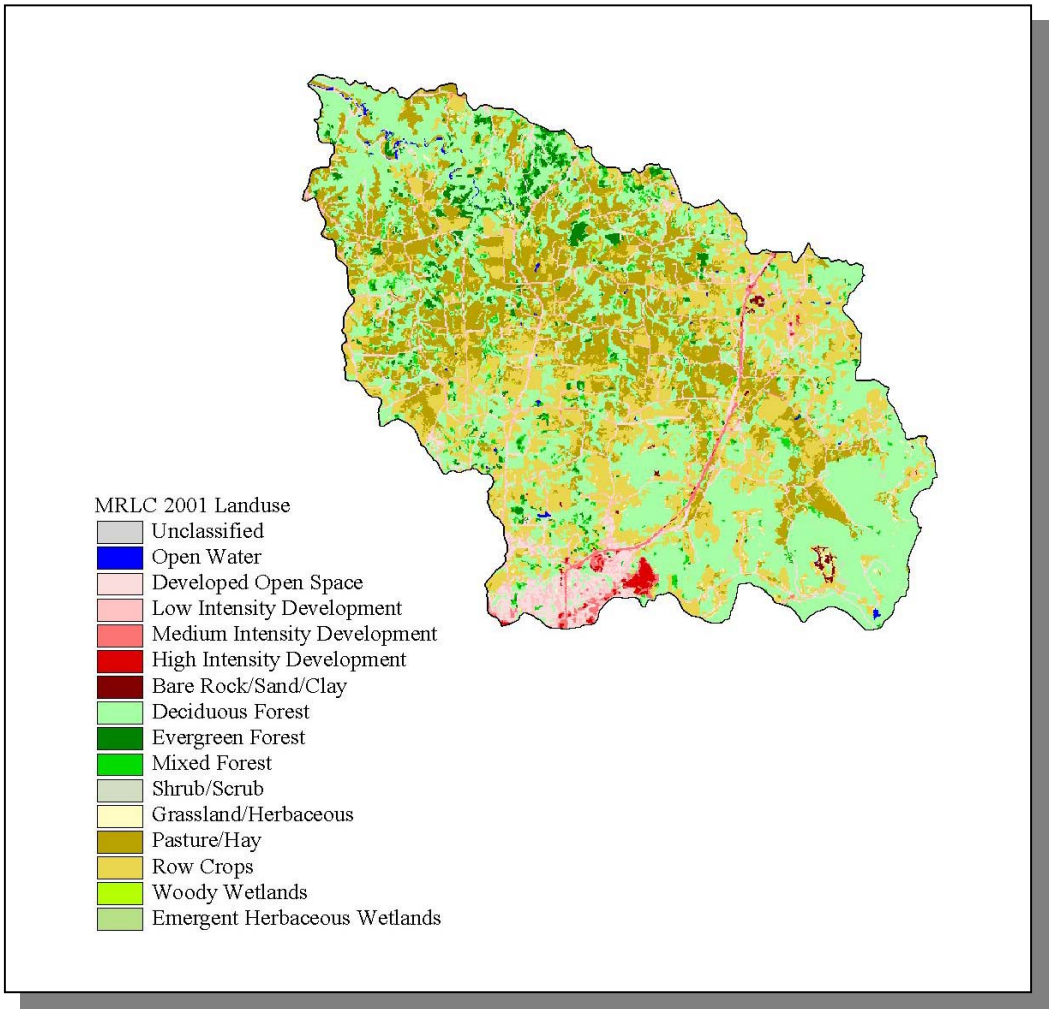

Figure 4-73. Illustration of Land Use Distribution in Subwatershed 051301060204.

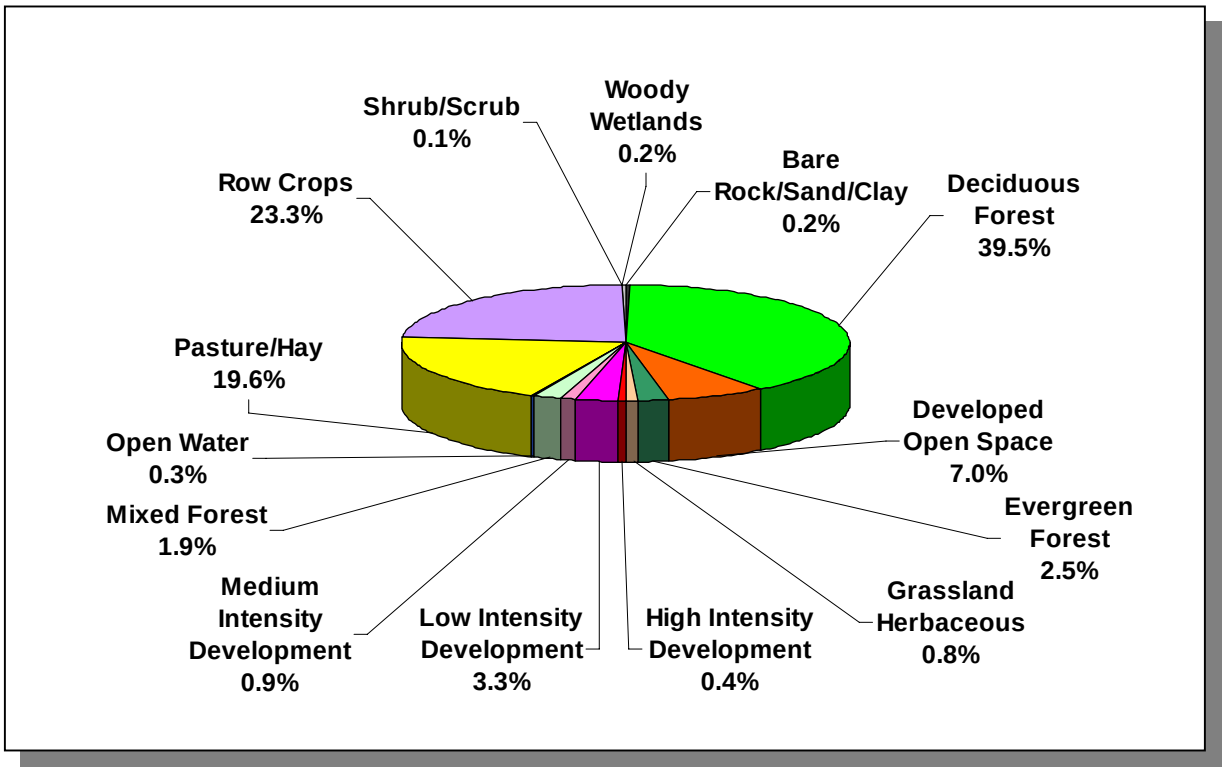

Figure 4-74. Land Use Distribution in Subwatershed 051301060204. *More information is provided in Appendix IV.*

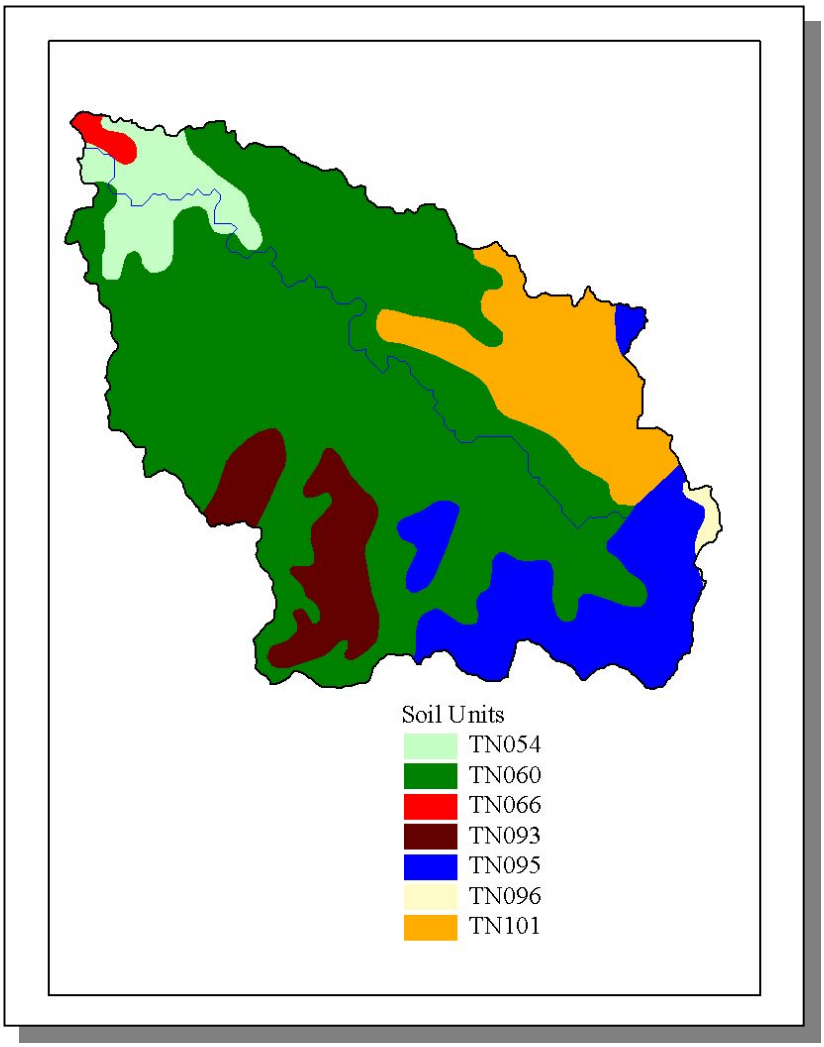

Figure 4-75. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060204.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN066	0.00	B	2.62	4.75	Loam	0.28
TN093	0.00	B	2.43	4.95	Loam	0.36
TN095	0.00	B	2.35	5.12	Loam	0.31
TN096	10.00	C	1.22	5.16	Silty Loam	0.38
TN101	0.00	B	1.71	5.39	Loam	0.35

Table 4-57. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060204. *The definition of "Hydrologic Group" is provided in Appendix IV.*

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	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Jackson	9,279	9,537	10,984	2.92	271	278	320	18.1
Overton	17,636	19,171	20,118	5.72	1,009	1,097	1,151	14.1
Putnam	51,373	58,326	62,315	10.92	5,608	6,367	6,803	21.3
Total	**78,306**	**87,034**	**93,417**		**6,888**	**7,742**	**8,274**	**20.1**

Table 4-58. Population Estimates in Subwatershed 051301010204.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Algood	Putnam	2,399	1,016	706	308	2
Cookeville	Putnam	21,744	9,284	8,131	1,135	18
Totals		**24,143**	**10,300**	**8,837**	**8,439**	**20**

Table 4-59. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051301060204.

Figure 4-76. Location of Historical Streamflow Data Collection Sites in Subwatershed 051301060204. *More information is provided in Appendix IV.*

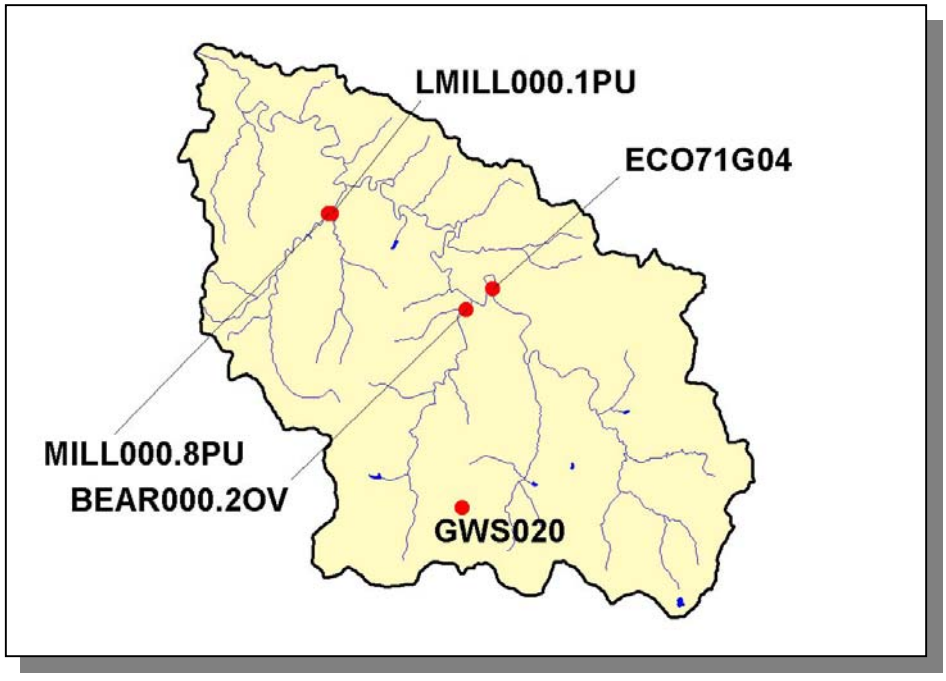

Figure 4-77. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060204. *More information, including site names and locations, is provided in Appendix IV.*

4.2.B.iv.a. Point Source Contributions.

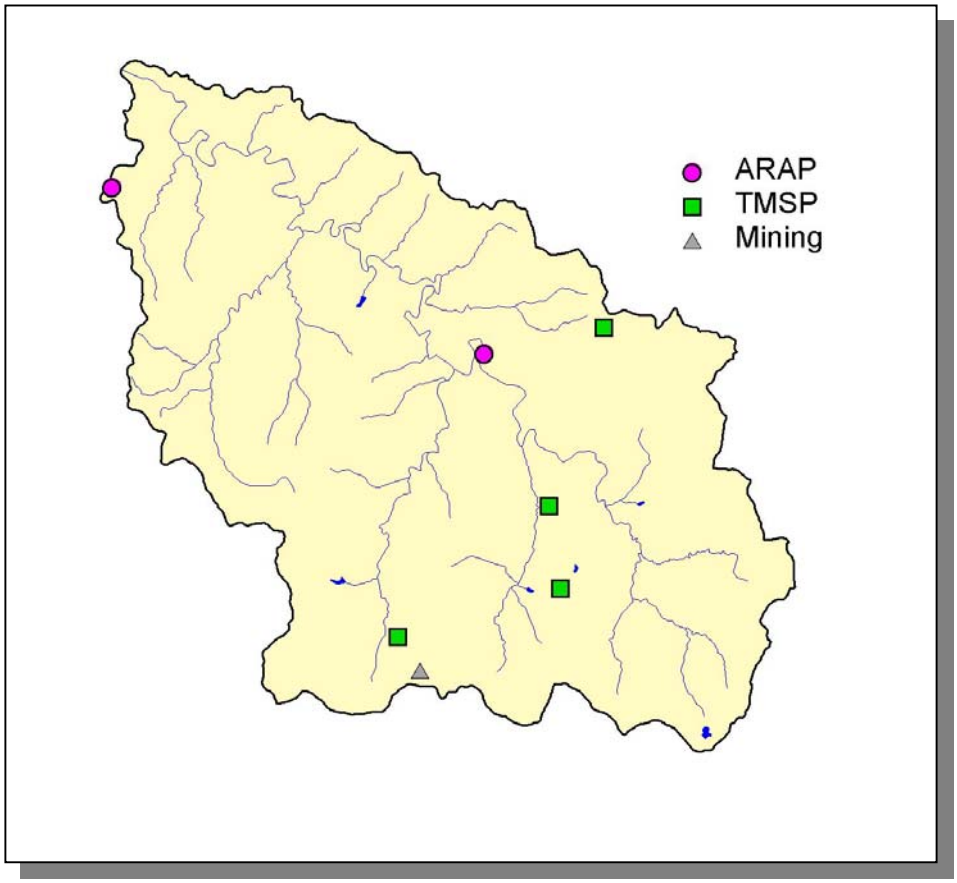

Figure 4-78. Location of Permits Issued in Subwatershed 051301060204. *More information, including the names of facilities, is provided in Appendix IV.*

Figure 4-79. Location of Active Mining Sites in Subwatershed 051301060204. *More information, including the names of mining operations, is provided in Appendix IV.*

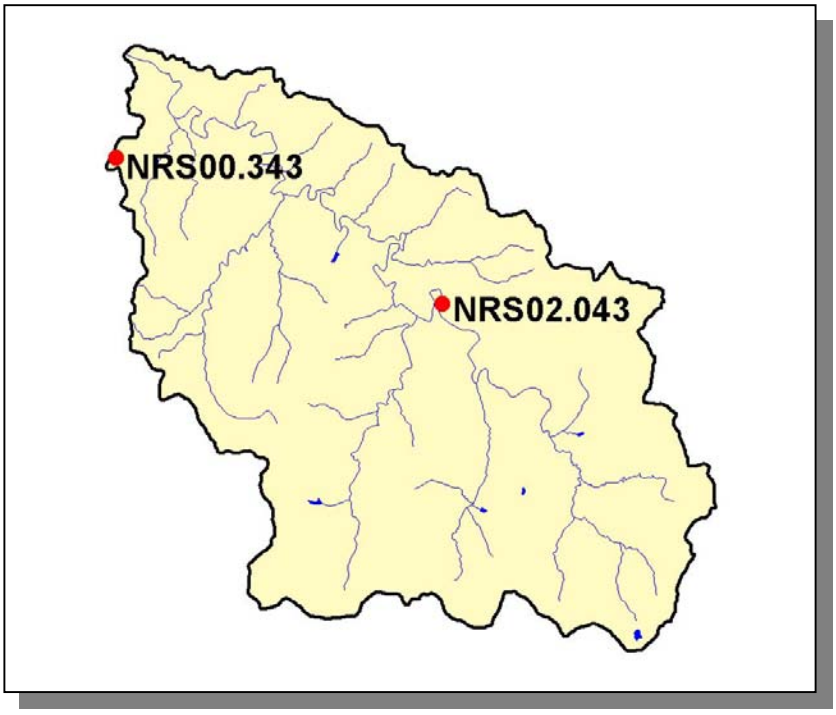

Figure 4-80. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 051301060204. *More information is provided in Appendix IV.*

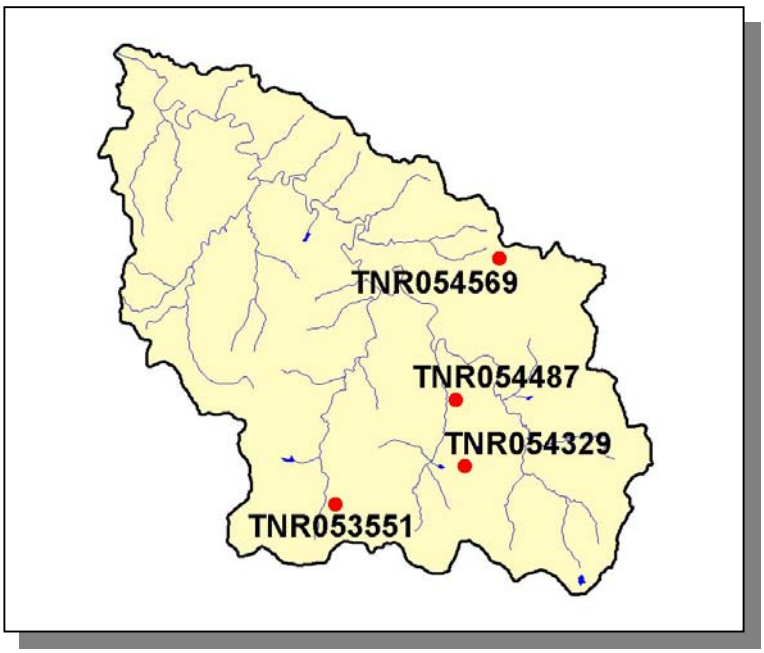

Figure 4-81. Location of TMSP Sites in Subwatershed 051301060204. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.B.iv.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
5,229	9,884	380	18	365	25

Table 4-60. Summary of Livestock Count Estimates in Subwatershed 051301060204. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jackson	6,962	12,086	10	727	403	39
Overton	15,150	27,812	1,200	1,173	811	59
Putnam	12,592	24,817	1,095	1,025	1,070	66

Table 4-61. Summary of Livestock Count Estimates in Jackson, Overton, and Putnam Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jackson	135.9	135.9	0.9	5.1
Overton	170.3	170.3	1.7	7.0
Putnam	152.5	152.3	3.6	16.4

Table 4-62. Forest Acreage and Annual Removal Rates (1987-1994) in Jackson, Overton, and Putnam Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Patureland)	0.41
Grass (Pastureland)	1.42
Grass (Hayland)	1.15
Legumes, Grass (Hayland)	1.43
Legumes (Hayland)	0.22
Grass, Forbs, Legumes (Mixed Pasture)	0.99
Corn (Row Crops)	9.00
Soybeans (Row Crops)	10.79
Tobacco (Row Crops)	12.38
Wheat (Close-Grown Cropland)	7.00
Other Vegetable and Truck Crops	17.07
Conservation Reserve Program Lands	0.46
Farmsteads and Ranch Headquarters	0.46

Table 4-63. Annual Estimated Total Soil Loss in Subwatershed 051301060204.

4.2.B.v. 051301060205 (Blackburn Fork).

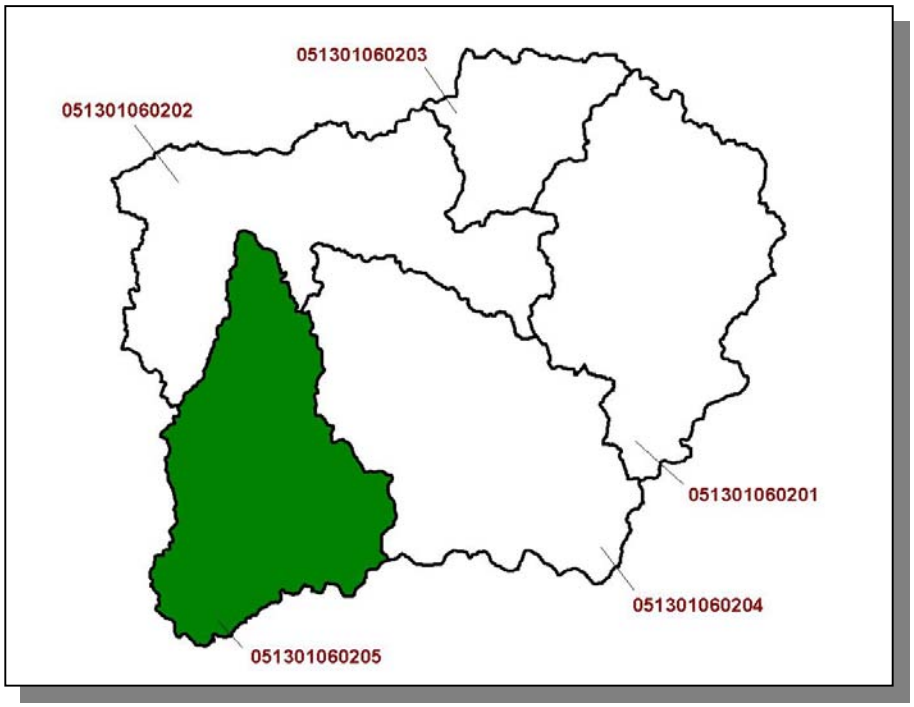

Figure 4-82. Location of Subwatershed 051301060205. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

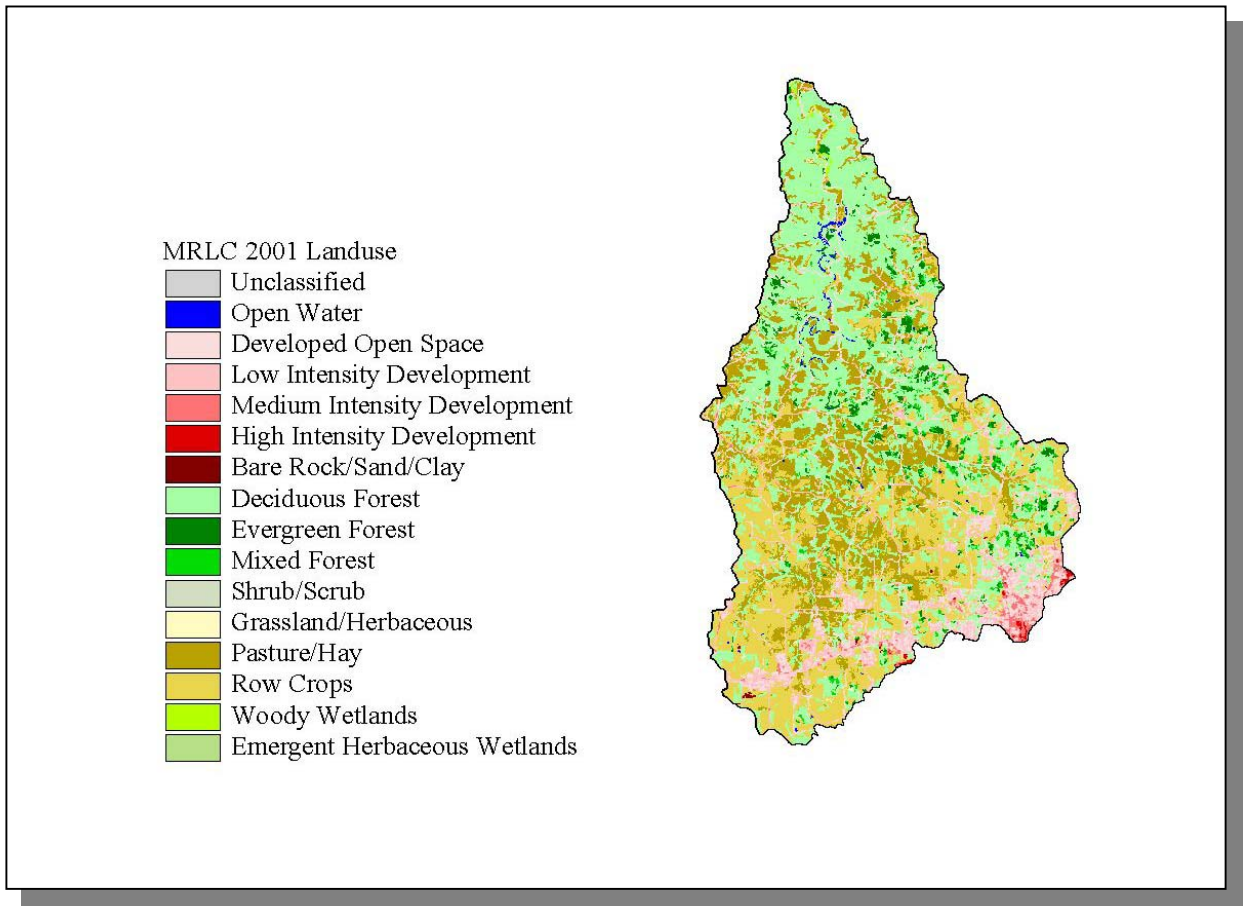

Figure 4-83. Illustration of Land Use Distribution in Subwatershed 051301060205.

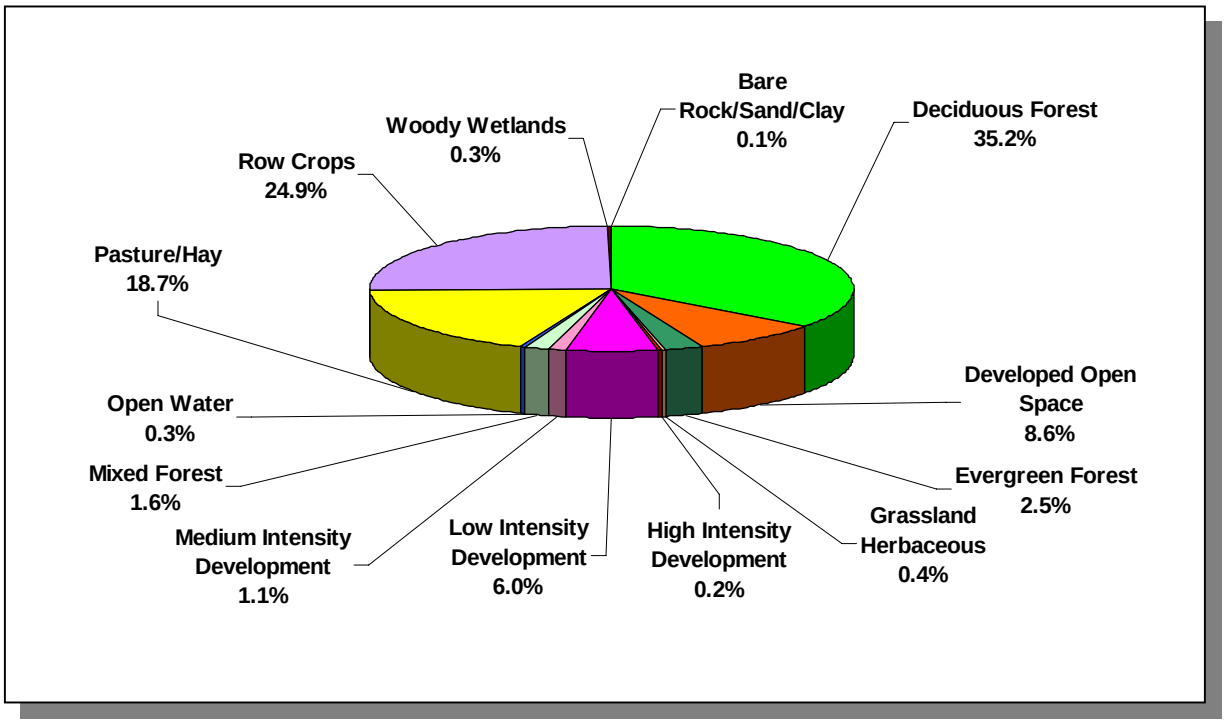

Figure 4-84. Land Use Distribution in Subwatershed 051301060205. *More information is provided in Appendix IV.*

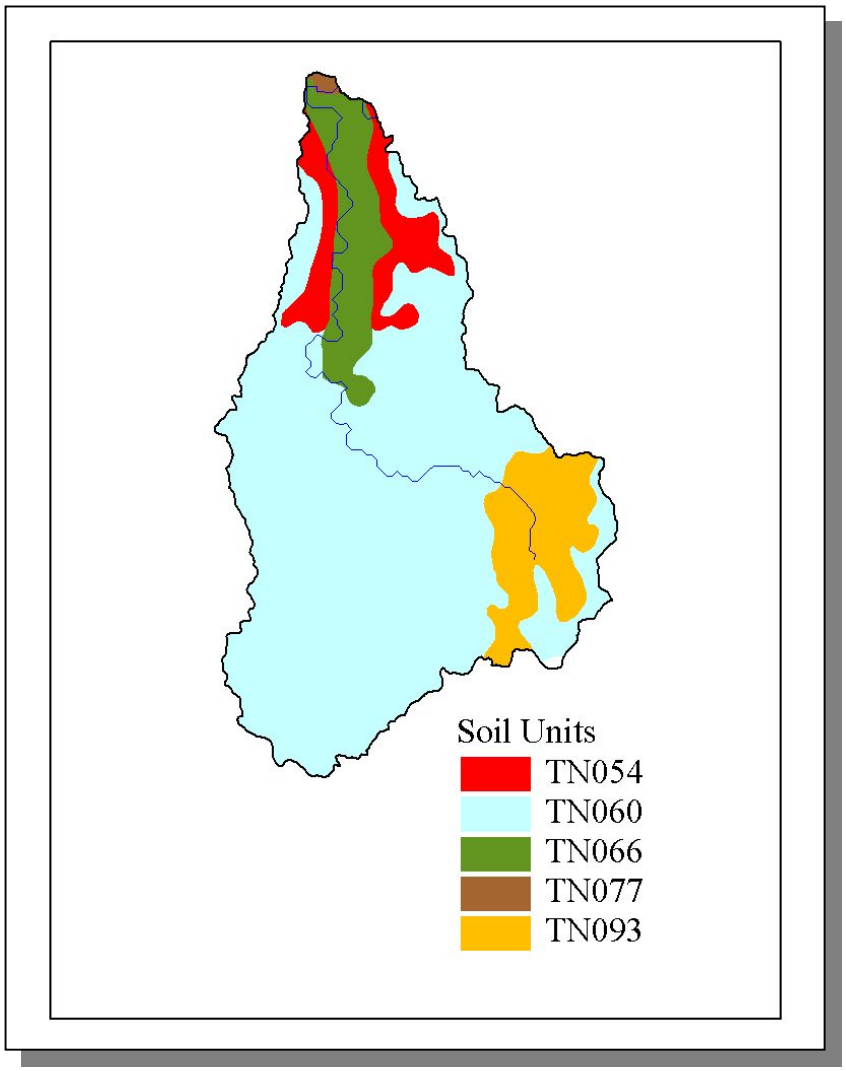

Figure 4-85. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060205.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN066	0.00	B	2.62	4.75	Loam	0.28
TN077	4.00	C	2.16	5.03	Loam	0.34
TN093	0.00	B	2.43	4.95	Loam	0.36

Table 4-64. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060205. *The definition of "Hydrologic Group" is provided in Appendix IV.*

.

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Jackson	9,297	9,537	10,984	8.38	779	799	920	18.1
Putnam	51,373	58,326	62,315	8.72	4,479	5,085	5,433	21.3
Total	**60,670**	**67,863**	**73,299**		**5,258**	**5,884**	**6,353**	**20.8**

Table 4-65. Population Estimates in Subwatershed 051301010205.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Baxter	Putnam	1,289	579	424	153	2
Cookeville	Putnam	21,744	9,284	8,131	1,135	18
Totals		**23,033**	**9,863**	**8,555**	**1,288**	**20**

Table 4-66. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051301060205.

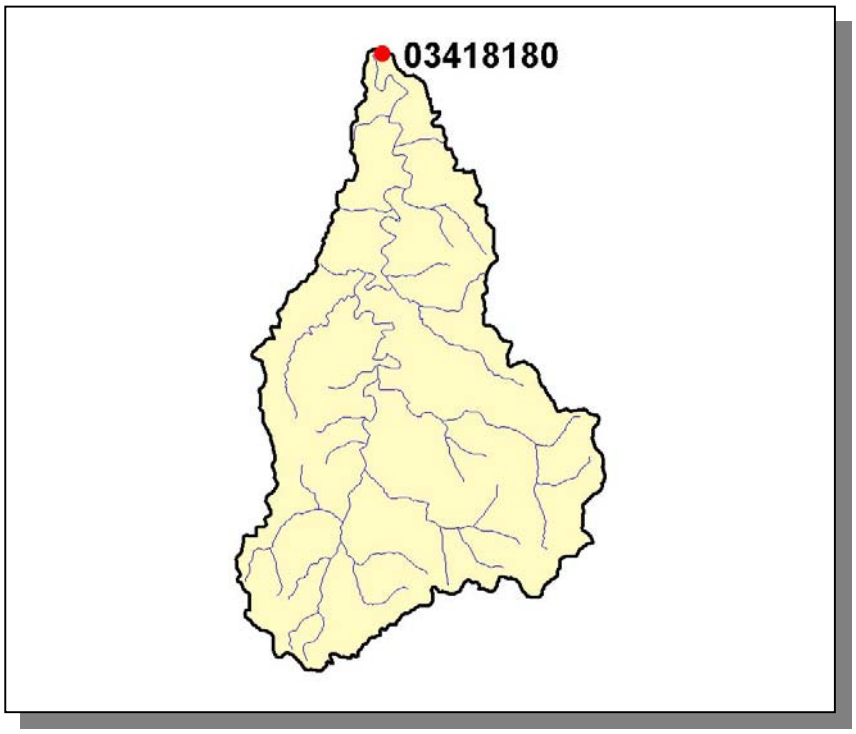

Figure 4-86. Location of Historical Streamflow Data Collection Sites in Subwatershed 051301060205. *More information is provided in Appendix IV.*

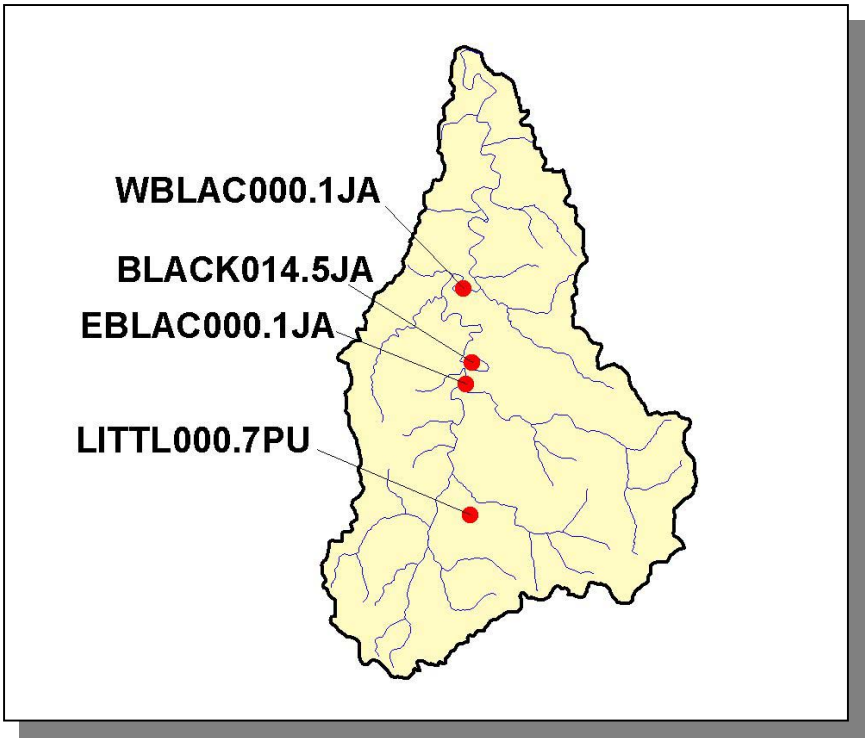

Figure 4-87. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060205. *More information, including site names and locations, is provided in Appendix IV.*

4.2.B.v.a. Point Source Contributions.

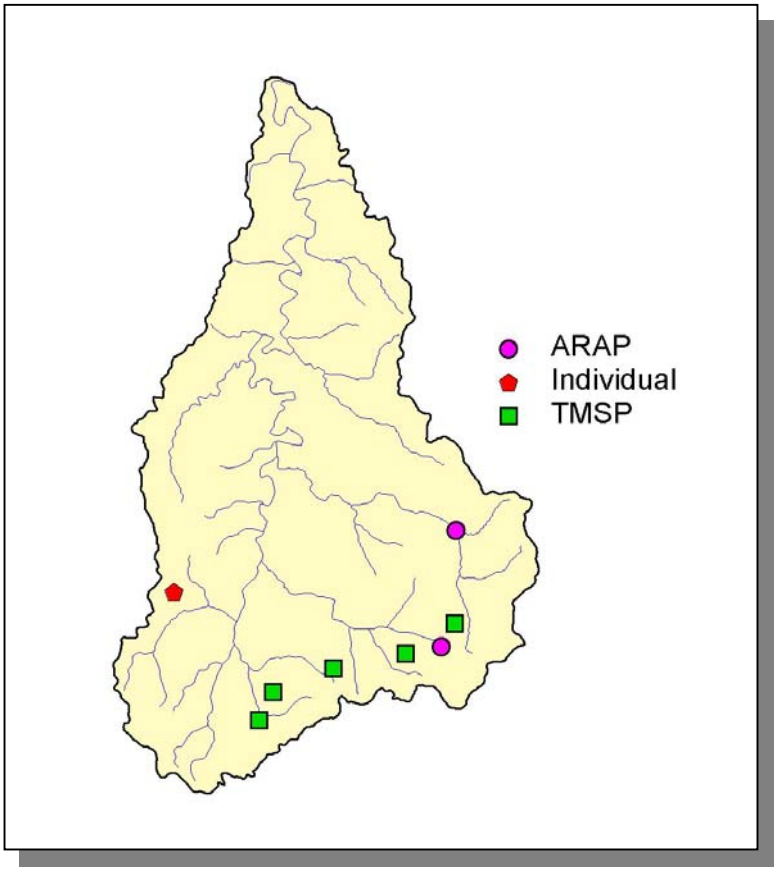

Figure 4-88. Location of Permits Issued in Subwatershed 051301060205. *More information, including the names of facilities, is provided in Appendix IV.*

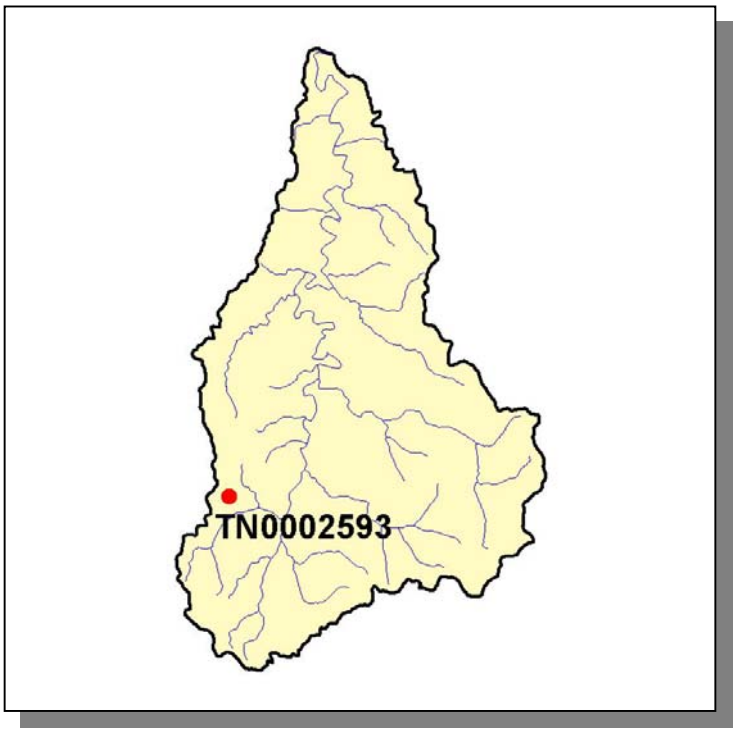

Figure 4-89. Location of Active NPDES Sites in Subwatershed 051301060205. *More information, including the names of facilities, is provided in Appendix IV.*

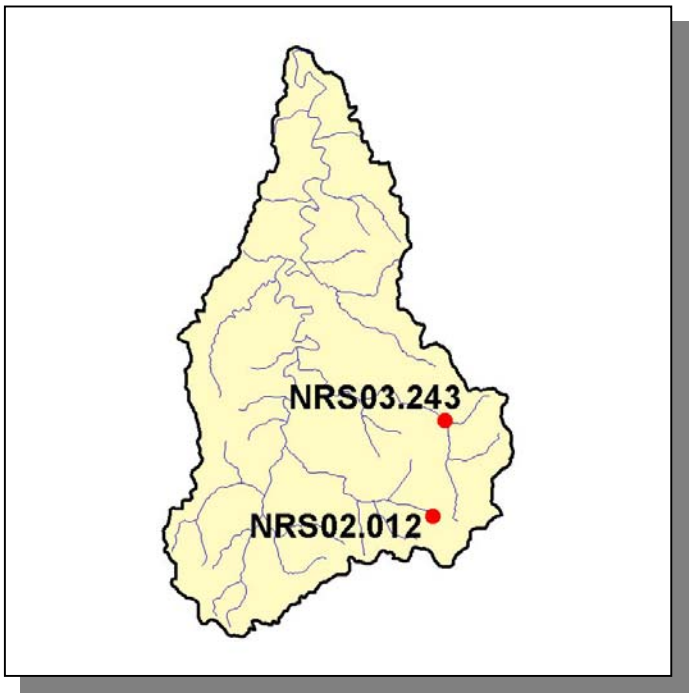

Figure 4-90. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 051301060205. *More information is provided in Appendix IV.*

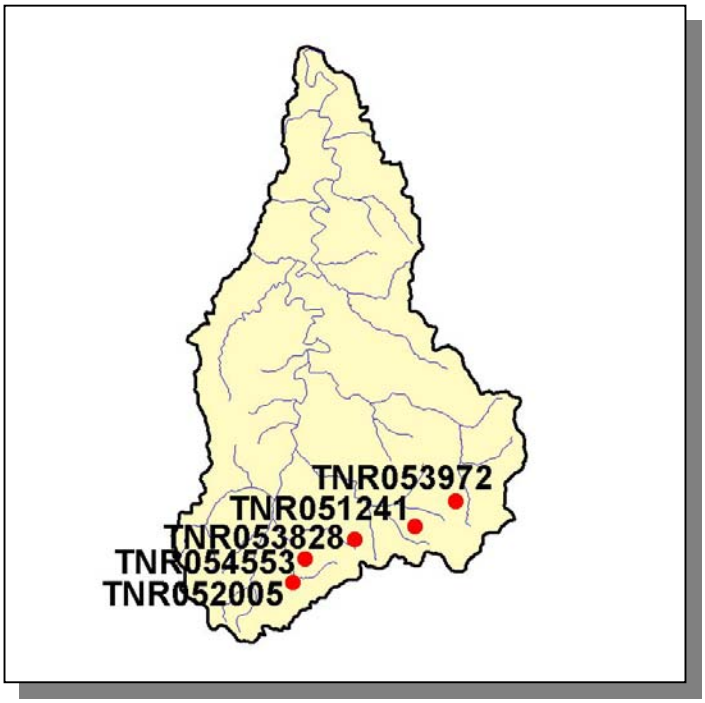

Figure 4-91. Location of TMSP Sites in Subwatershed 051301060205. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.B.v.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
4,025	7,634	241	15	308	22

Table 4-67. Summary of Livestock Count Estimates in Subwatershed 051301060205. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jackson	6,962	12,086	10	727	403	39
Putnam	12,592	24,817	1,095	1,025	1,070	66

Table 4-68. Summary of Livestock Count Estimates in Jackson and Putnam Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jackson	135.9	135.9	0.9	5.1
Putnam	152.5	152.3	3.6	16.4

Table 4-69. Forest Acreage and Annual Removal Rates (1987-1994) in Jackson and Putnam Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	2.05
Grass (Hayland)	1.63
Legumes (Hayland)	0.20
Legumes, Grass (Hayland)	0.61
Grass, Forbs, Legumes (Mixed Pasture)	1.41
Corn (Row Crops)	21.43
Tobacco (Row Crops)	12.38
Other Vegetable and Truck Crops	14.60
Farmsteads and Ranch Headquarters	0.69

Table 4-70. Annual Estimated Total Soil Loss in Subwatershed 051301060205.

4.2.C. 0513010603.

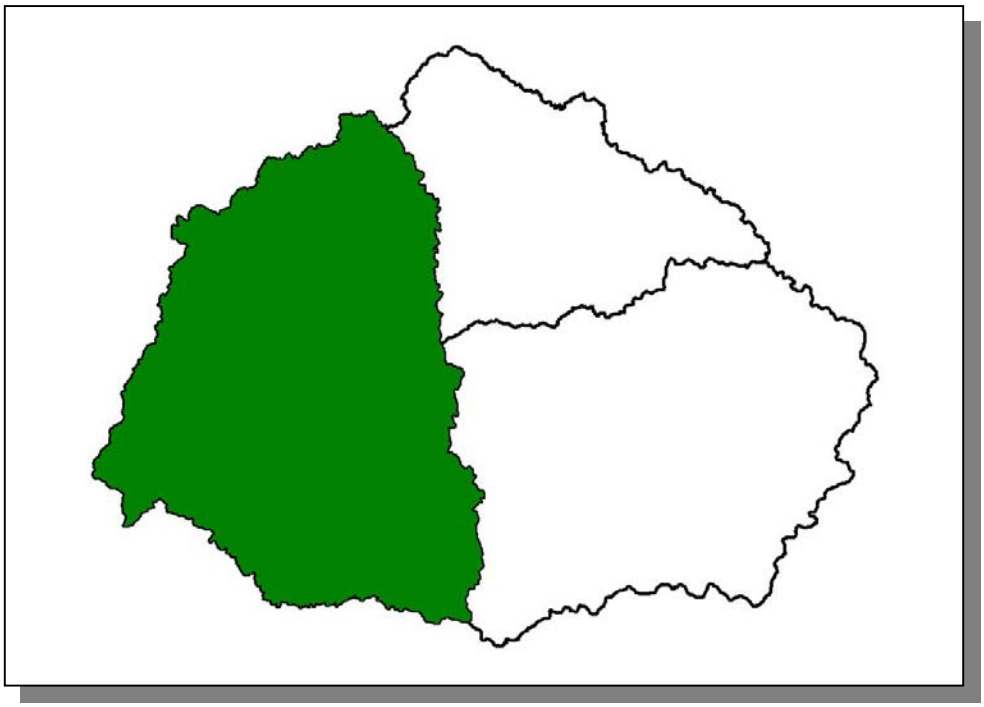

Figure 4-92. Location of Subwatershed 0513010603. *All Tennessee Cordell Hull Lake HUC-10 subwatershed boundaries are shown for reference.*

4.2.C.i. 051301060301 (Cumberland River).

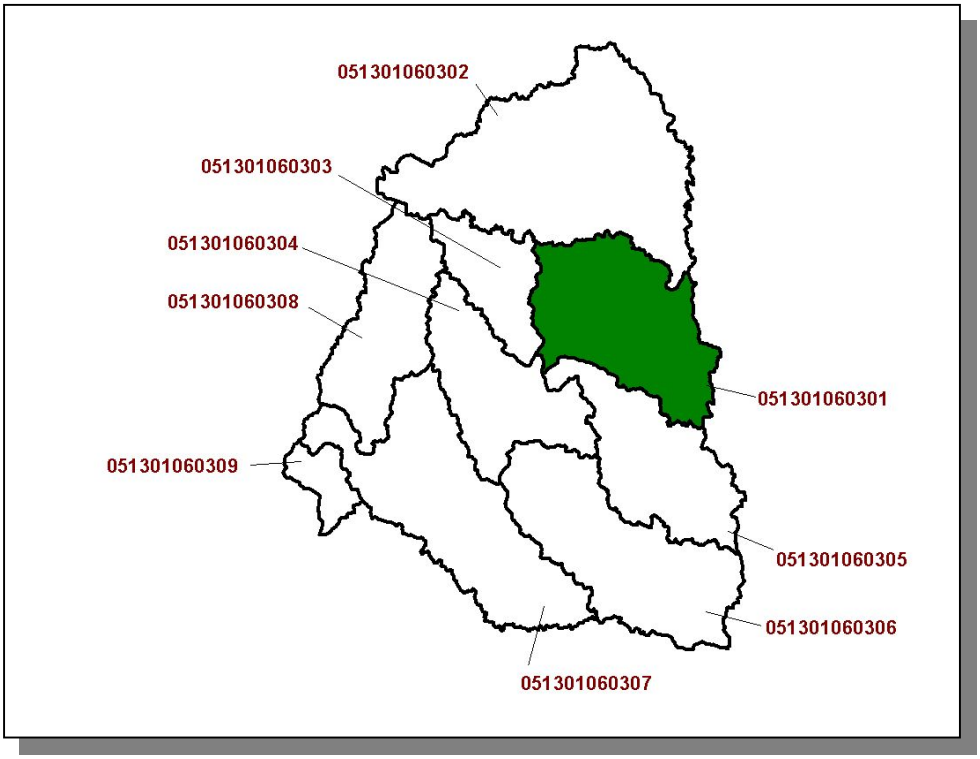

Figure 4-93. Location of Subwatershed 051301060301. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

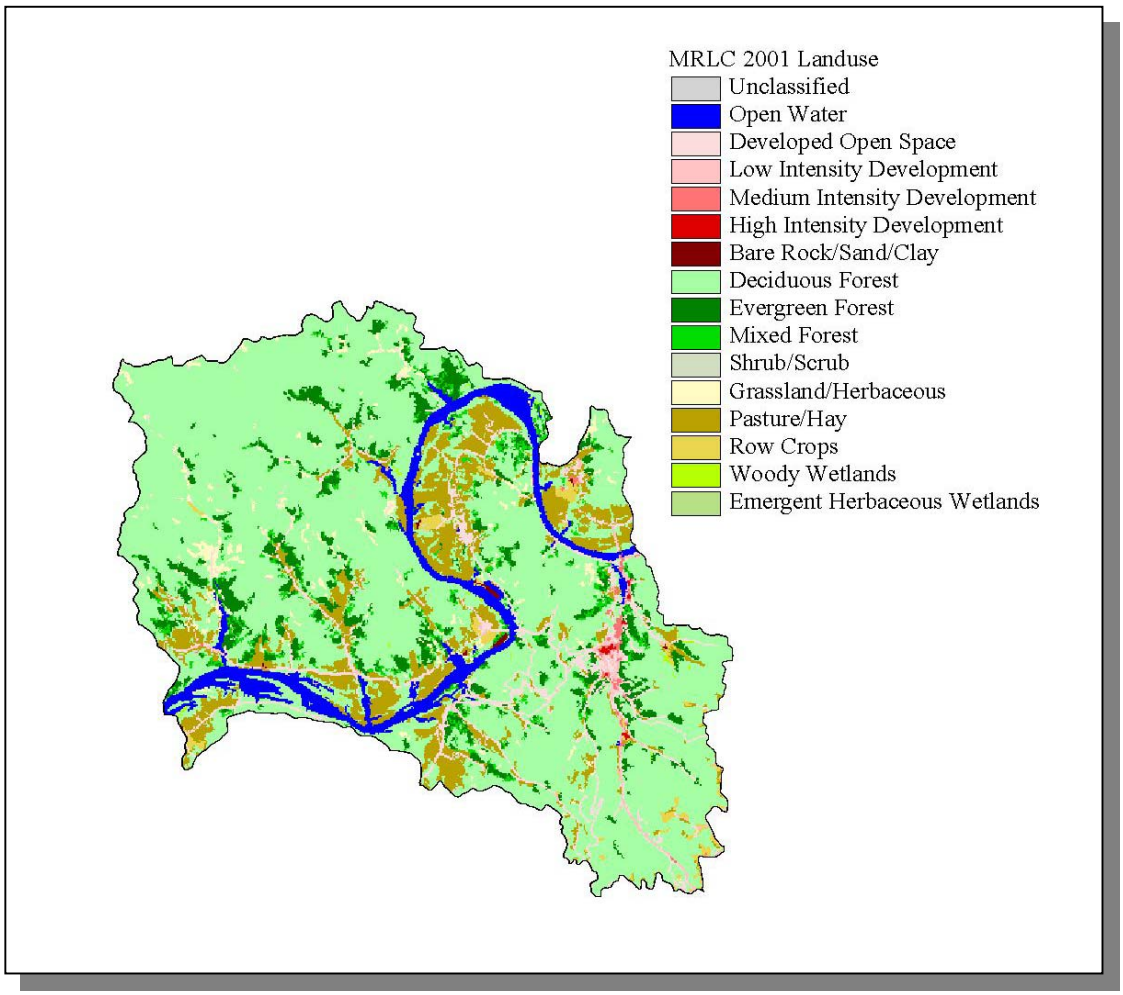

Figure 4-94. Illustration of Land Use Distribution in Subwatershed 051301060301.

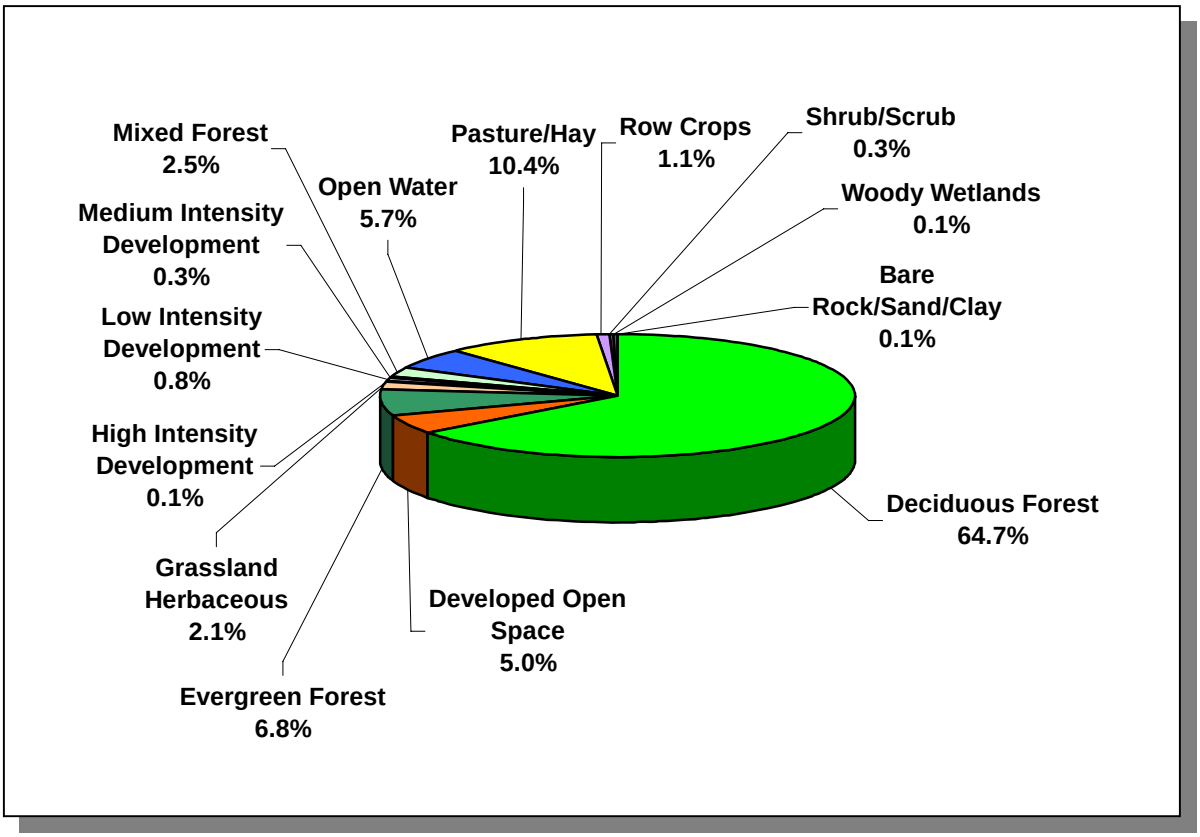

Figure 4-95. Land Use Distribution in Subwatershed 051301060301. *More information is provided in Appendix IV.*

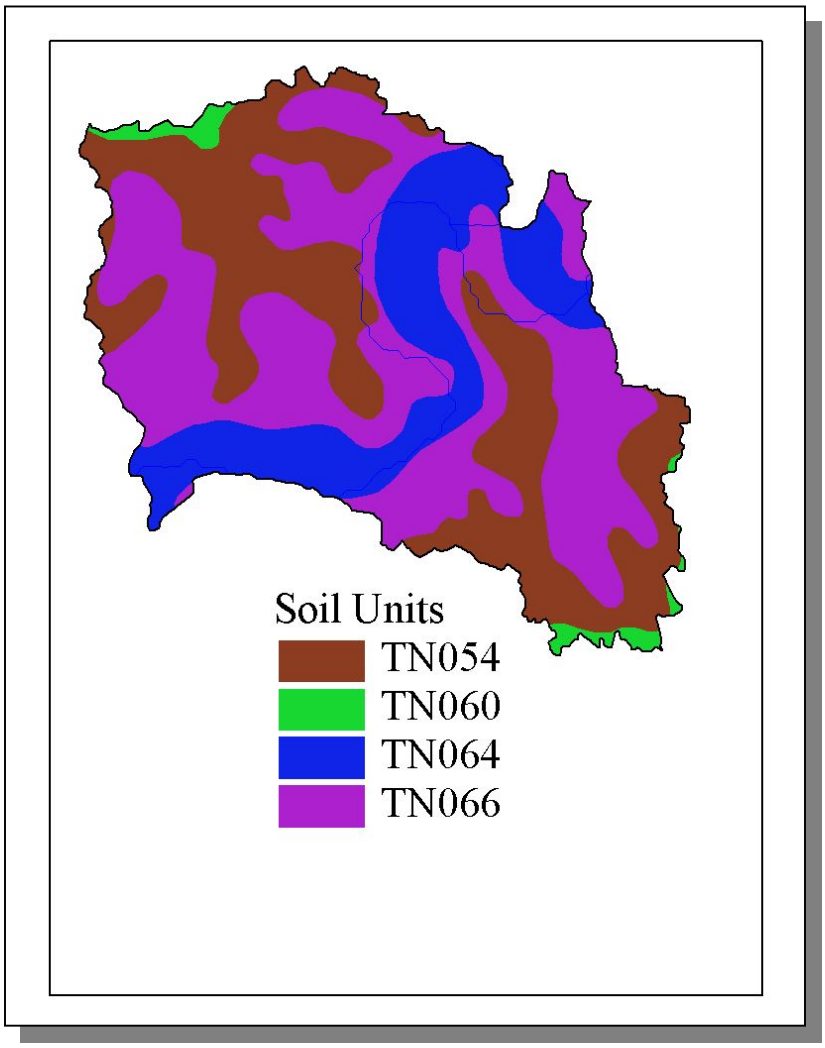

Figure 4-96. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060301.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	19.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28

Table 4-71. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060301. *The definition of "Hydrologic Group" is provided in Appendix IV.*

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	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Jackson	9,297	9,537	10,984	13.41	1,247	1,279	1,473	18.1

Table 4-72. Population Estimates in Subwatershed 051301010301.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Gainesboro	Jackson	1,002	495	411	82	2

Table 4-73. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051301060301.

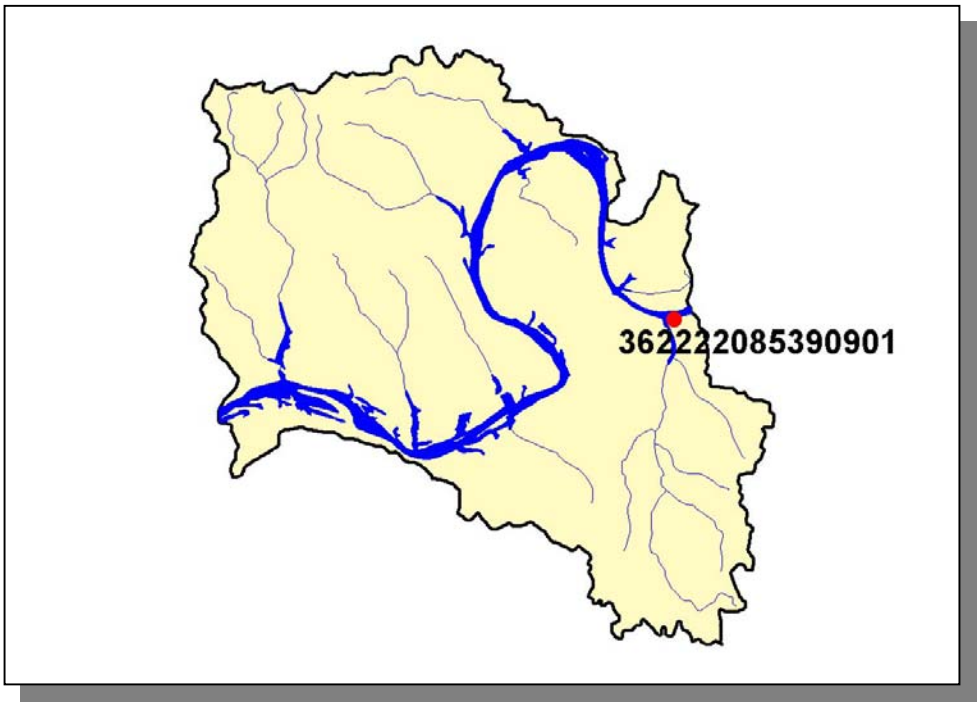

Figure 4-97. Location of Historical Streamflow Data Collection Sites in Subwatershed 051301060301. *More information is provided in Appendix IV.*

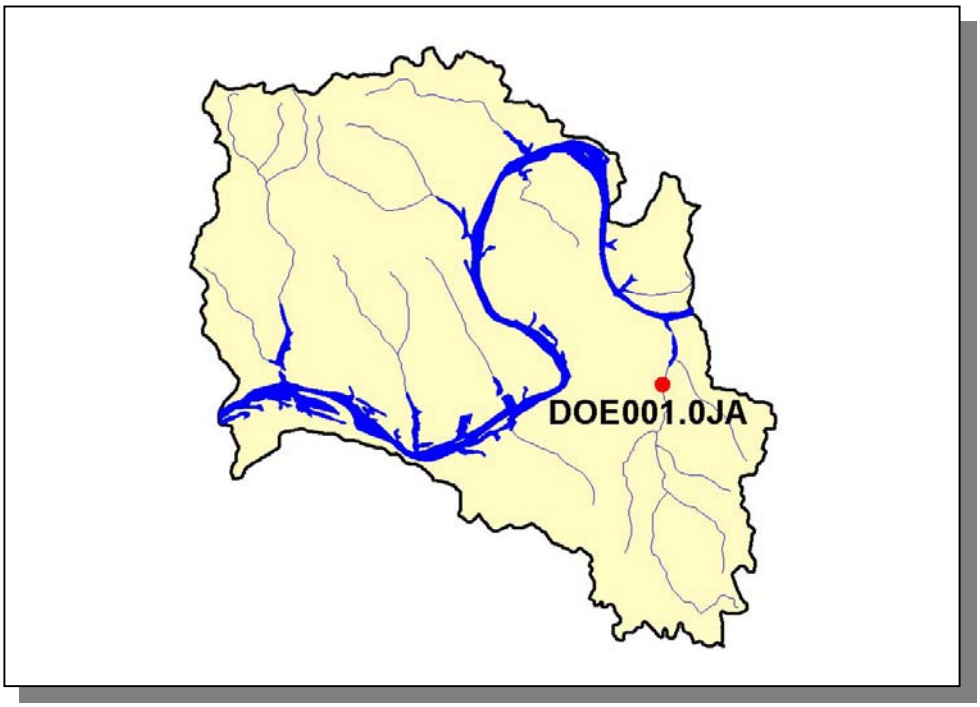

Figure 4-98. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060301. *More information, including site names and locations, is provided in Appendix IV.*

4.2.C.i.a. Point Source Contributions.

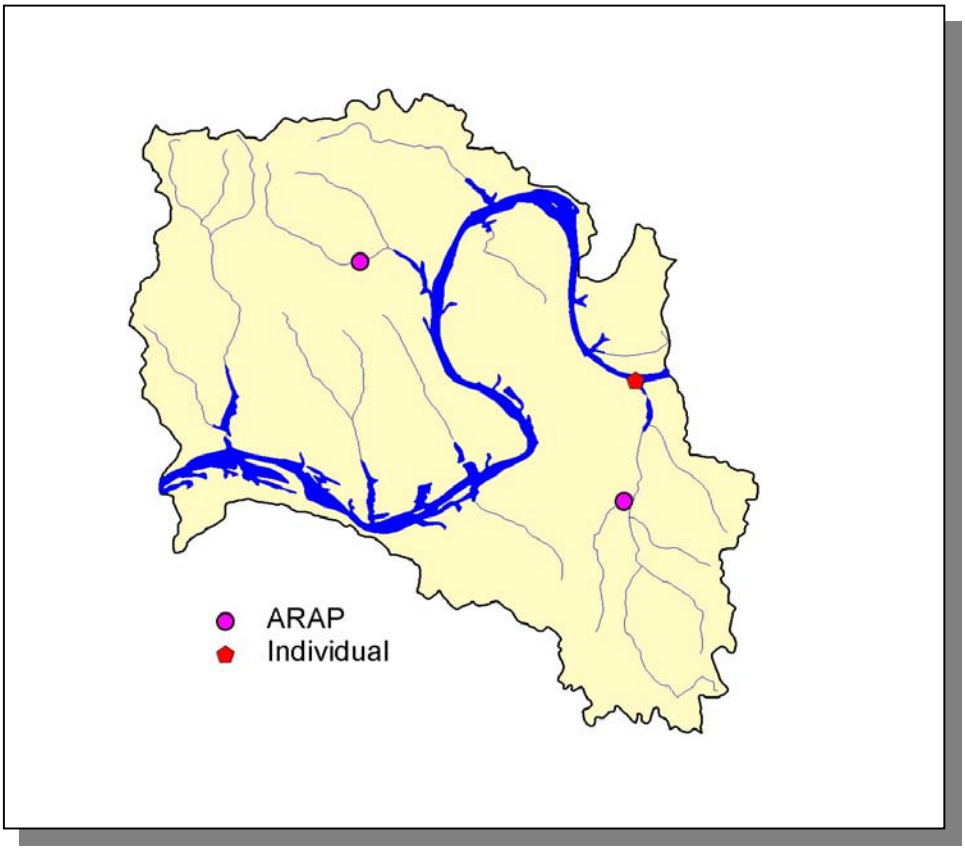

Figure 4-99. Location of Permits Issued in Subwatershed 051301060301. *More information, including the names of facilities, is provided in Appendix IV.*

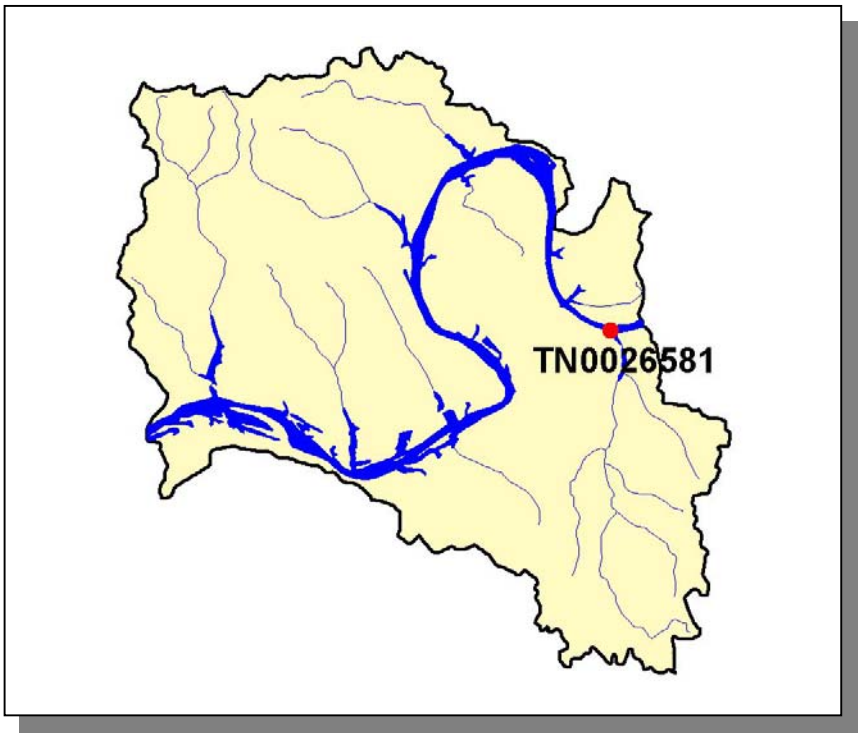

Figure 4-100. Location of Active NPDES Sites in Subwatershed 051301060301. *More information, including the names of facilities, is provided in Appendix IV.*

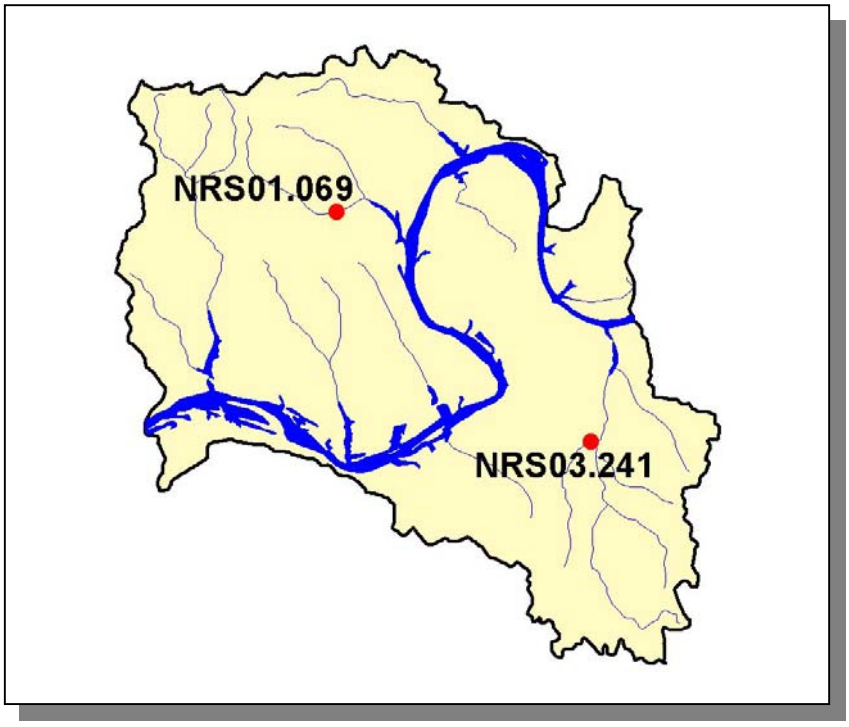

Figure 4-101. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 051301060301. *More information is provided in Appendix IV.*

4.2.C.i.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
799	1,386	<5	<5	46	<5

Table 4-74. Summary of Livestock Count Estimates in Subwatershed 051301060301. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jackson	6,962	12,086	10	727	403	39

Table 4-75. Summary of Livestock Count Estimates in Jackson County. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jackson	135.9	135.9	0.9	5.1

Table 4-76. Forest Acreage and Annual Removal Rates (1987-1994) in Jackson County.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	2.24
Legumes (Hayland)	0.17
Grass, Forbs, Legumes (Mixed Pasture)	1.99
Corn (Row Crops)	21.43
Farmsteads and Ranch Headquarters	1.31

Table 4-77. Annual Estimated Total Soil Loss in Subwatershed 051301060301.

4.2.C.ii. 051301060302 (Jennings Creek).

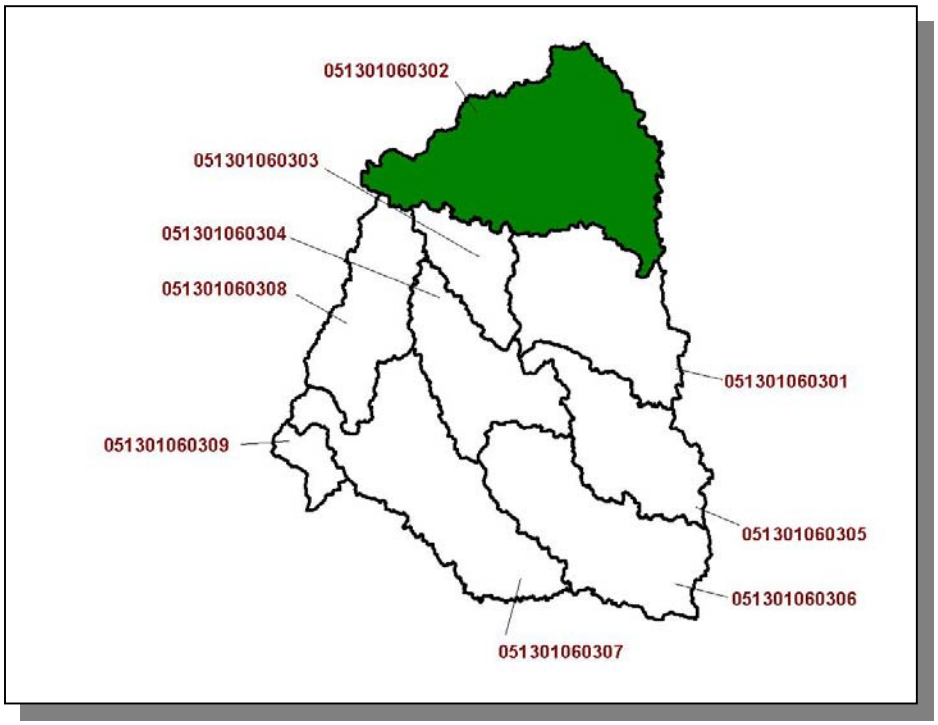

Figure 4-102. Location of Subwatershed 051301060302. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

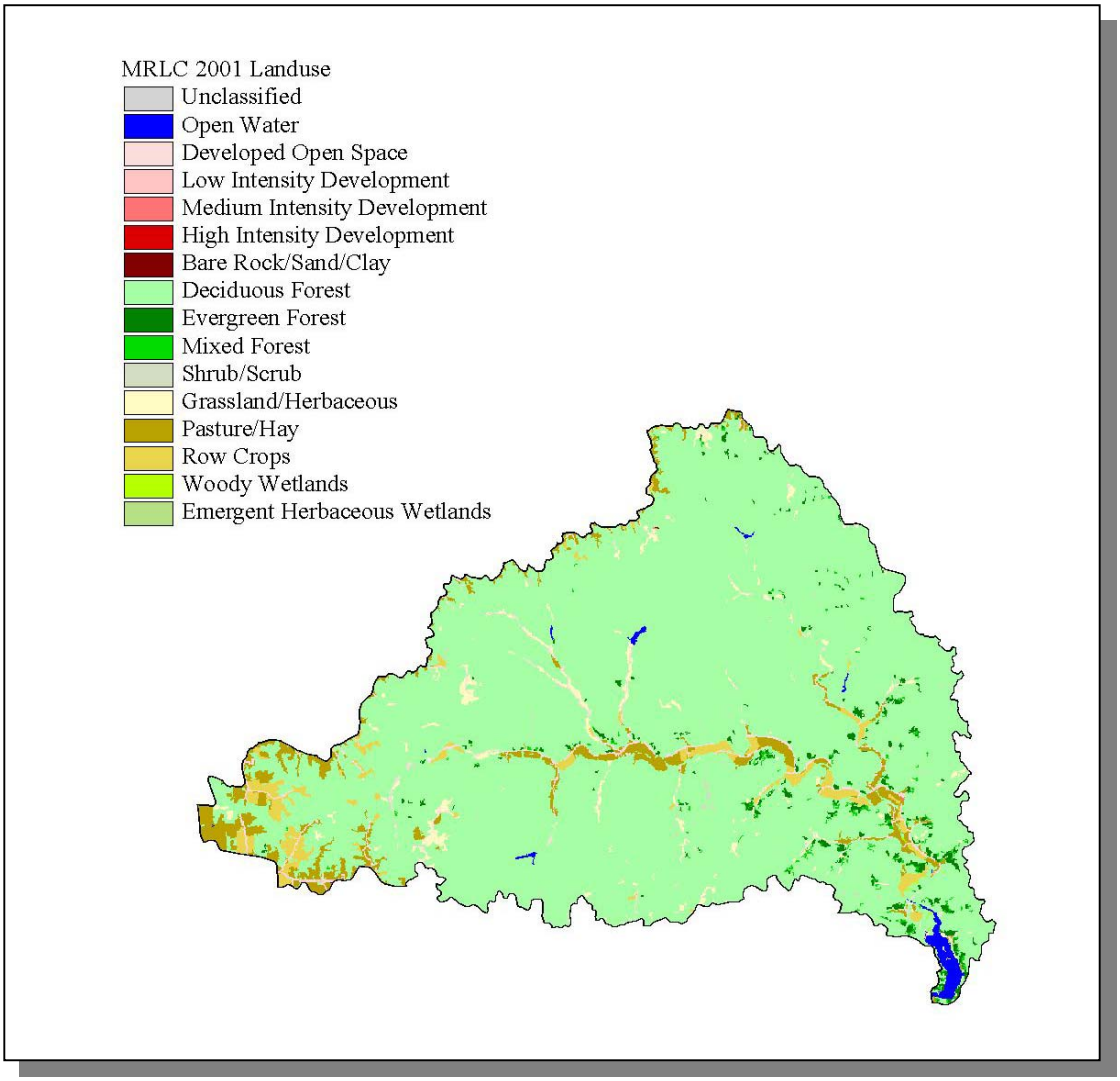

Figure 4-103. Illustration of Land Use Distribution in Subwatershed 051301060302.

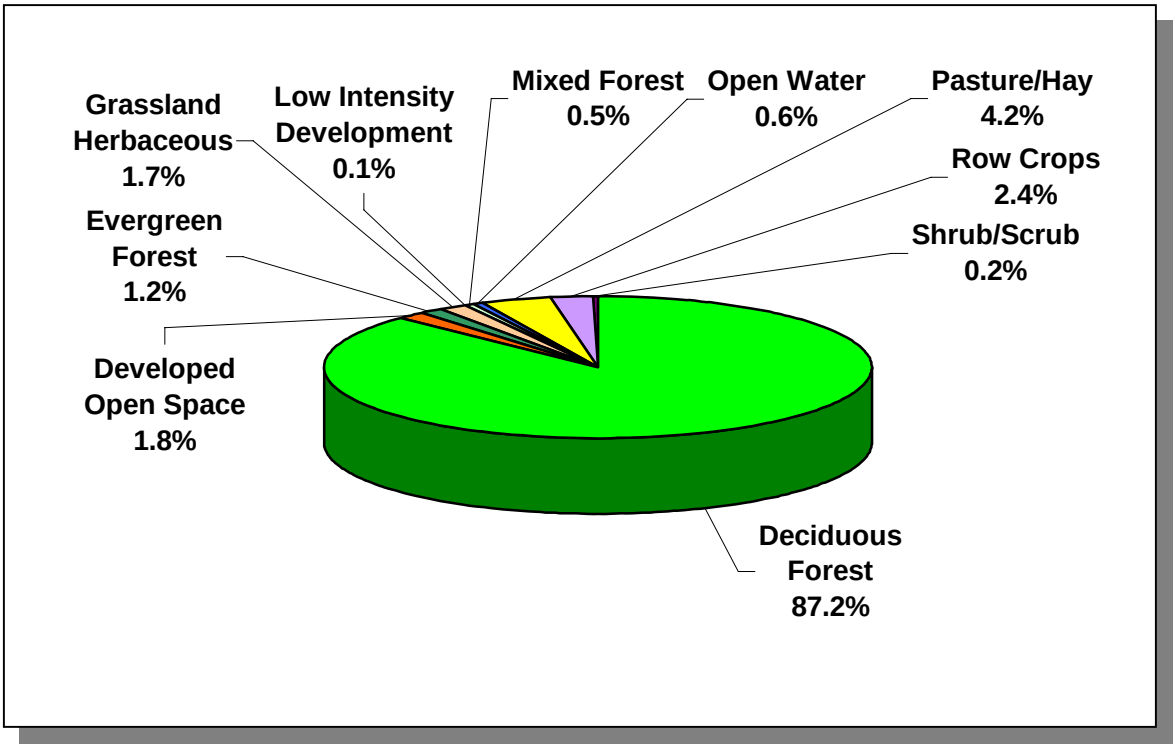

Figure 4-104. Land Use Distribution in Subwatershed 051301060302. *More information is provided in Appendix IV.*

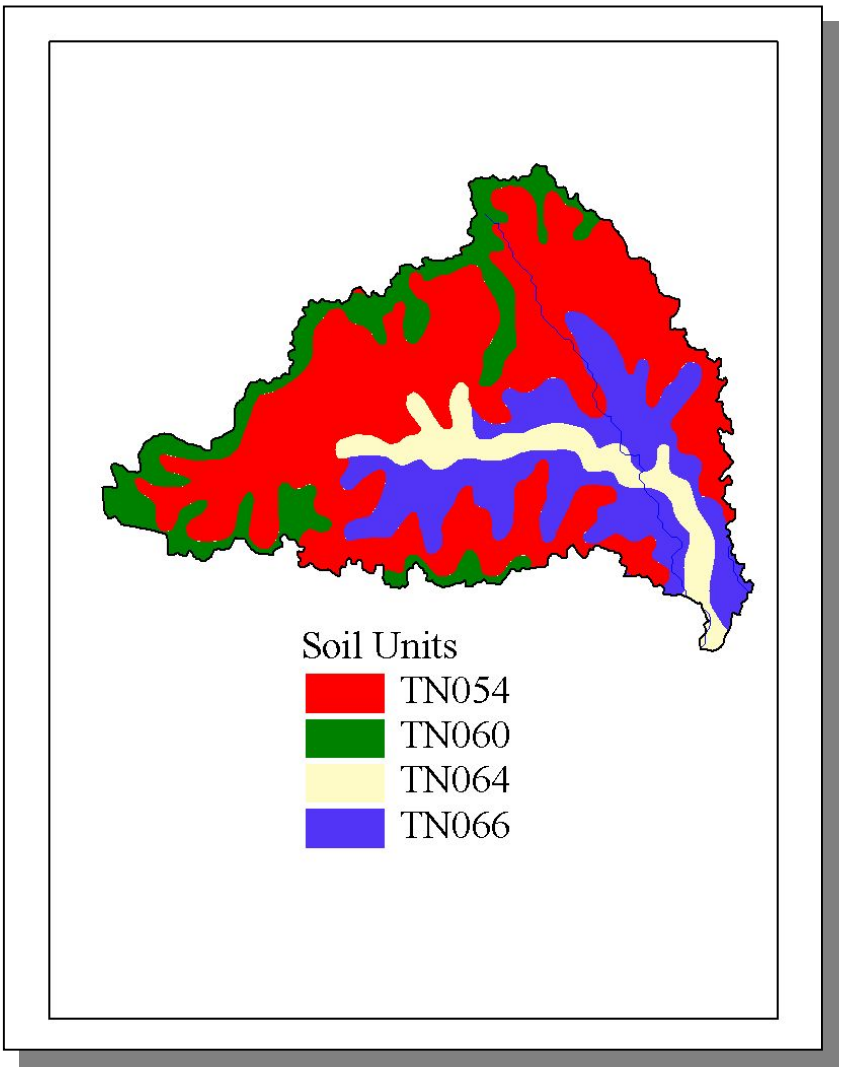

Figure 4-105. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060302.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28

Table 4-78. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060302. *The definition of "Hydrologic Group" is provided in Appendix IV.*

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	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Clay	7,238	7,311	7,976	3.74	271	274	298	10.0
Jackson	9,297	9,537	10,984	16.57	1,540	1,580	1,820	18.2
Macon	15,906	17,854	20,386	3.77	600	673	769	28.2
Total	**32,441**	**34,702**	**39,346**		**2,411**	**2,527**	**2,887**	**19.7**

Table 4-79. Population Estimates in Subwatershed 051301010302.

Figure 4-106. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060302. *More information, including site names and locations, is provided in Appendix IV.*

4.2.C.ii.a. Point Source Contributions.

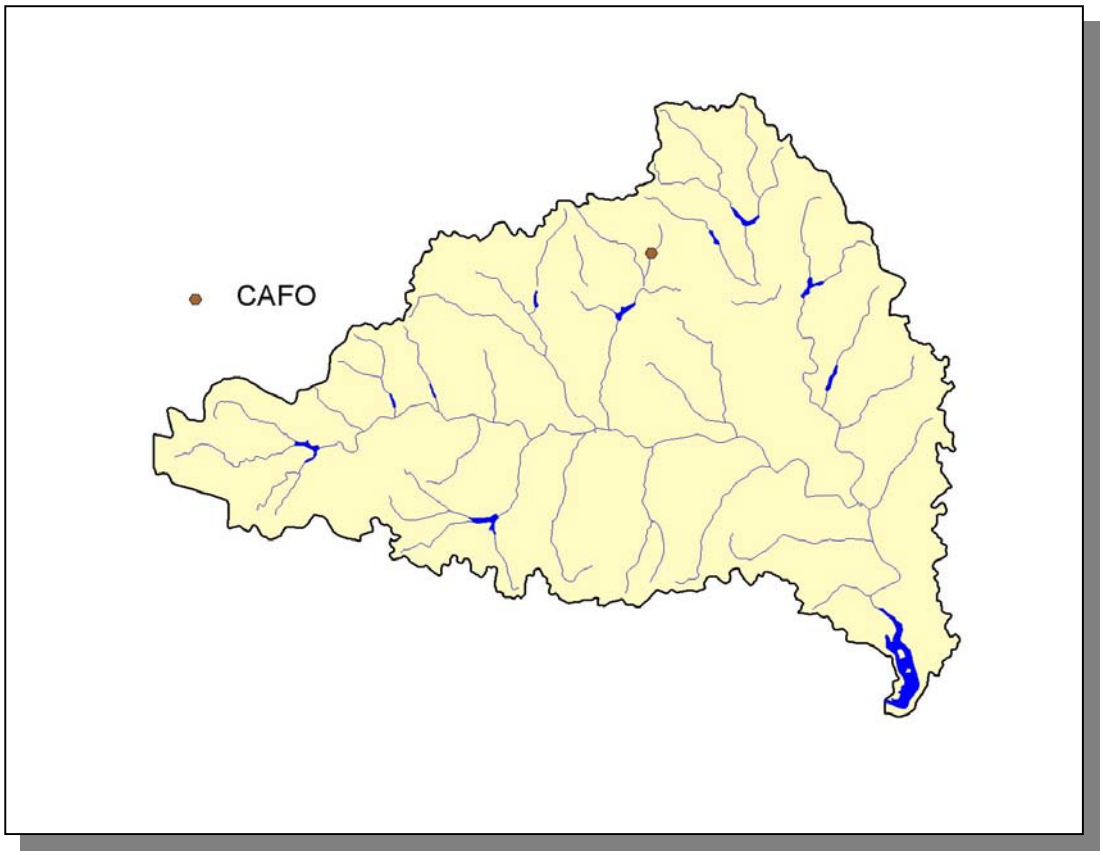

Figure 4-107. Location of Permits Issued in Subwatershed 051301060302. *More information, including the names of facilities, is provided in Appendix IV.*

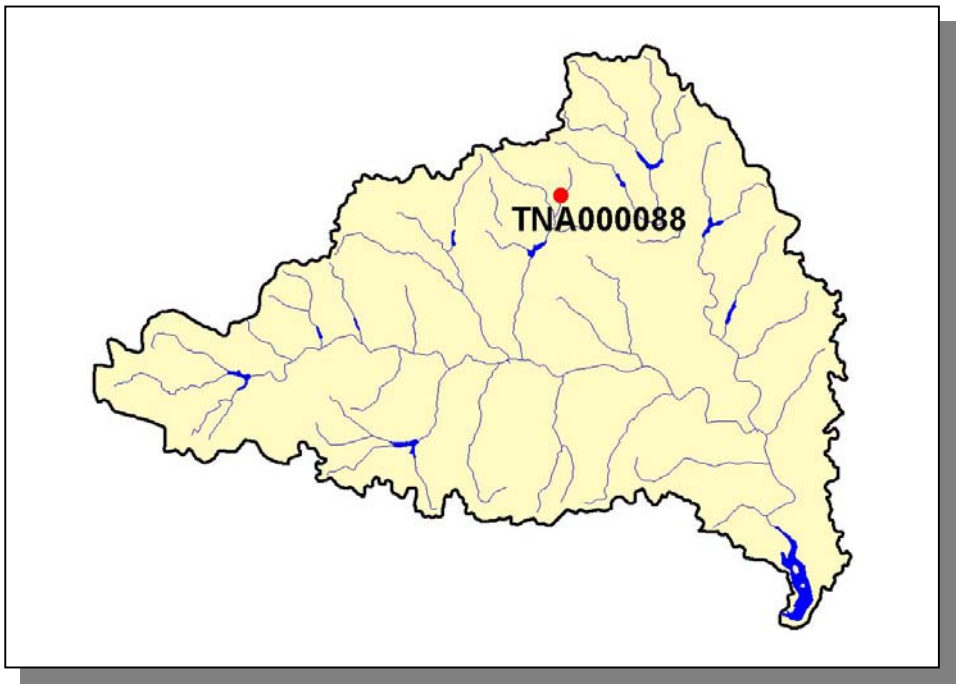

Figure 4-108. Location of Concentrated Animal Feeding Operations (CAFO) in Subwatershed 051301060302. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.C.ii.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
871	1,652	11	<5	101	6

Table 4-80. Summary of Livestock Count Estimates in Subwatershed 051301060302. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Clay	0	14,574	0	18	174	23
Jackson	6,962	12,086	10	727	403	39
Macon	15,039	26,098	318	675	2,377	111

Table 4-81. Summary of Livestock Count Estimates in Clay, Jackson, and Macon Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Clay	105.1	105.1	2.3	10.1
Jackson	135.9	135.9	0.9	5.1
Macon				

Table 4-82. Forest Acreage and Annual Removal Rates (1987-1994) in Clay, Jackson, and Macon Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.35
Grass (Pastureland)	1.80
Grass (Hayland)	0.30
Legumes, Grass (Hayland)	0.31
Legumes (Hayland)	0.16
Grass, Forbs, Legumes (Mixed Pasture)	1.76
Corn (Row Crops)	18.19
Tobacco (Row Crops)	18.95
Wheat (Close-Grown Cropland)	3.43
Other Vegetable and Truck Crops	5.48
Conservation Reserve Program Lands	0.28
Farmsteads and Ranch Headquarters	1.16

Table 4-83. Annual Estimated Total Soil Loss in Subwatershed 051301060302.

4.2.C.iii. 051301060303 (Wartrace Creek).

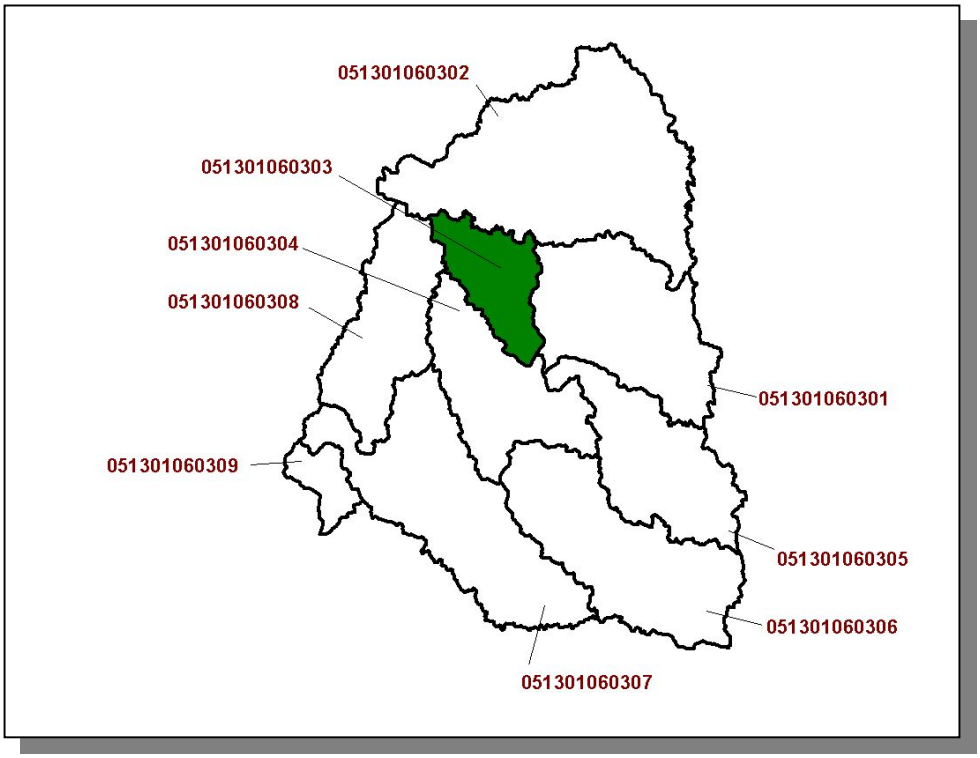

Figure 4-109. Location of Subwatershed 051301060303. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

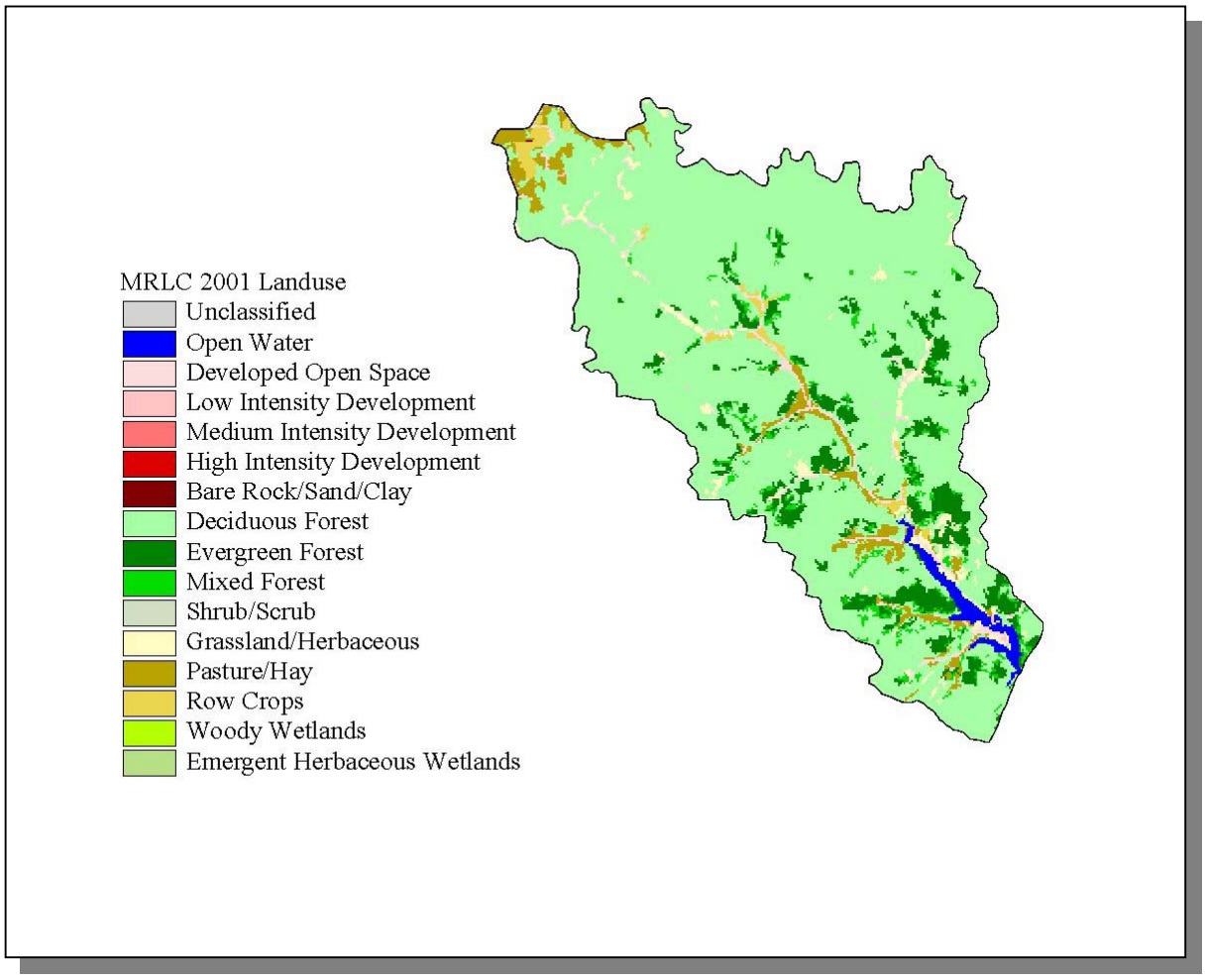

Figure 4-110. Illustration of Land Use Distribution in Subwatershed 051301060303.

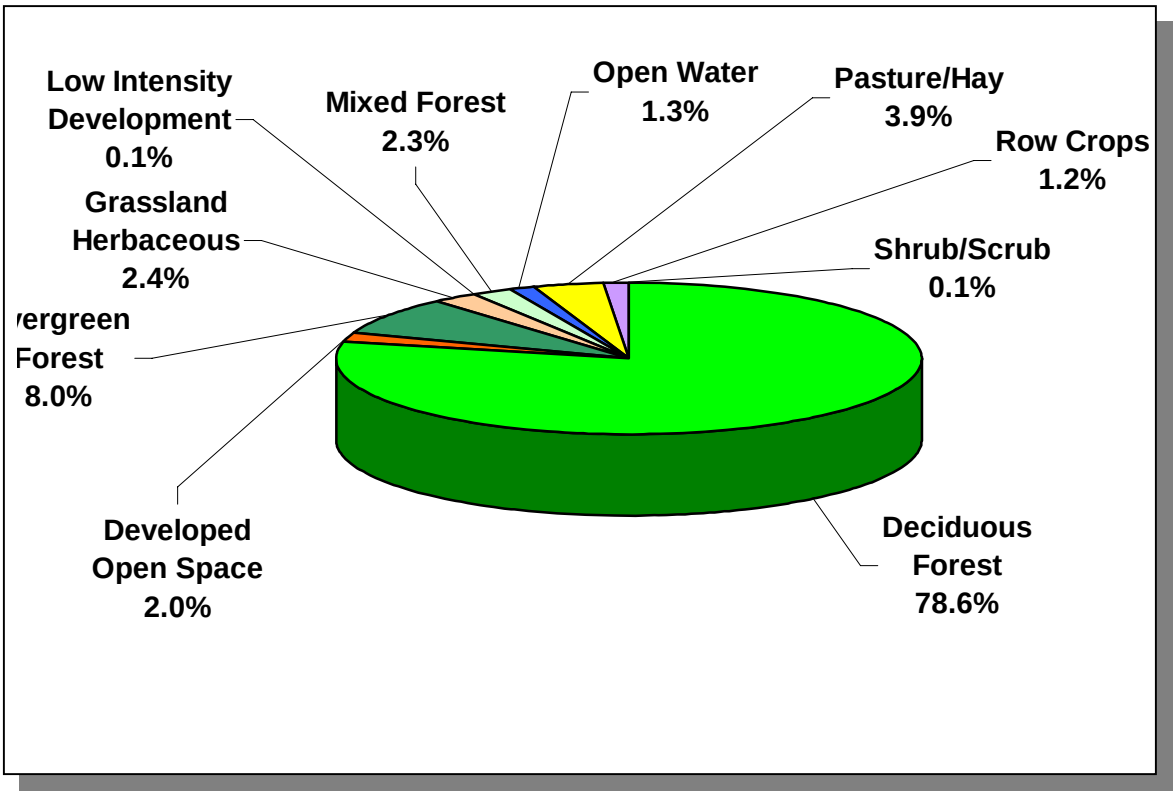

Figure 4-111. Land Use Distribution in Subwatershed 051301060303. *More information is provided in Appendix IV.*

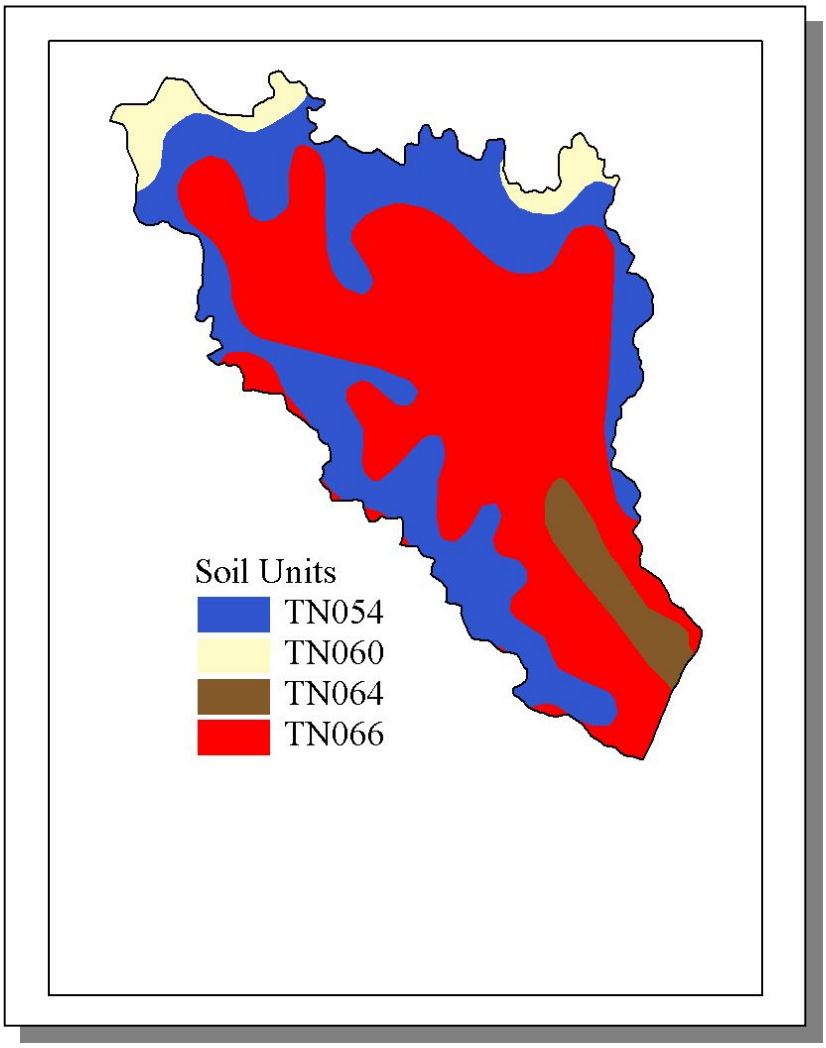

Figure 4-112. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060303.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28

Table 4-84. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060303. *The definition of "Hydrologic Group" is provided in Appendix IV.*

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	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Jackson	9,297	9,537	10,984	4.21	392	402	463	18.1
Macon	15,906	17,854	20,386	0.83	132	148	169	28.0
Smith	14,143	16,047	17,712	0.44	62	71	78	25.8
Total	**39,346**	**43,438**	**49,082**		**586**	**621**	**710**	**21.2**

Table 4-85. Population Estimates in Subwatershed 051301010303.

4.2.C.iii.a. Point Source Contributions.

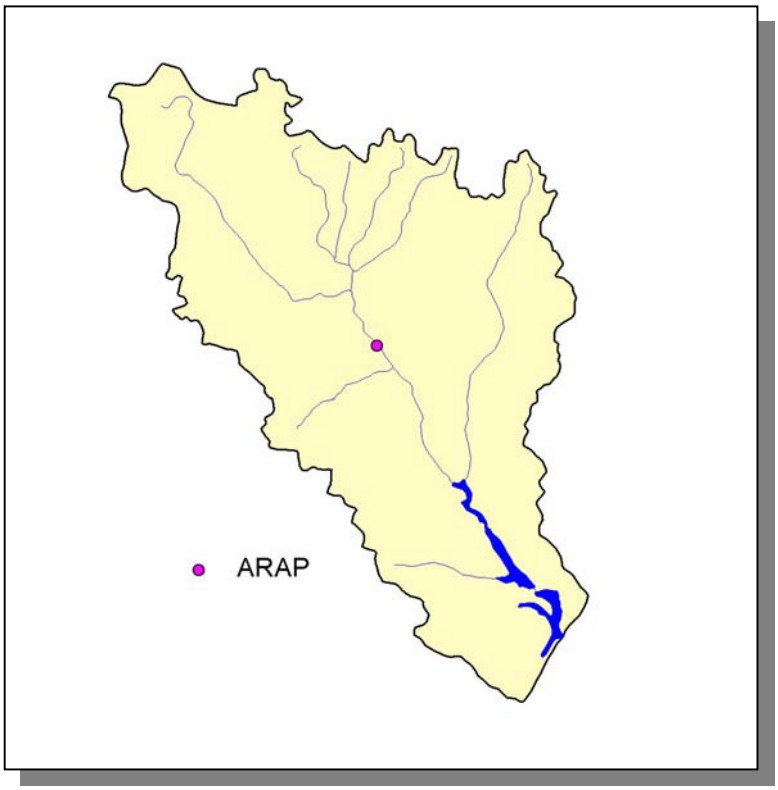

Figure 4-113. Location of Permits Issued in Subwatershed 051301060303. *More information, including the names of facilities, is provided in Appendix IV.*

Figure 4-114. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 051301060303. *More information is provided in Appendix IV.*

4.2.C.iii.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
270	469	<5	<5	28	<5

Table 4-86. Summary of Livestock Count Estimates in Subwatershed 051301060303. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jackson	6,962	12,086	10	727	403	39
Macon	15,039	26,098	318	675	2,377	111
Smith	17,187	29,672	814	683	1,883	332

Table 4-87. Summary of Livestock Count Estimates in Jackson, Macon, and Smith Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jackson	135.9	135.9	0.9	5.1
Macon				
Smith	81.0	81.0	1.1	2.6

Table 4-88. Forest Acreage and Annual Removal Rates (1987-1994) in Jackson, Macon, and Smith Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.35
Grass (Pastureland)	1.90
Grass (Hayland)	0.18
Legumes, Grass (Hayland)	0.13
Legumes (Hayland)	0.16
Grass, Forbs, Legumes (Mixed Pasture)	1.74
Corn (Row Crops)	18.56
Soybeans (Row Crops)	6.36
Tobacco (Row Crops)	9.68
Wheat (Close-Grown Cropland)	3.43
Other Vegetable and Truck Crops	5.48
Conservation Reserve Program Lands	0.28
Farmsteads and Ranch Headquarters	1.07

Table 4-89. Annual Estimated Total Soil Loss in Subwatershed 051301060303.

4.2.C.iv. 051301060304 (Cumberland River).

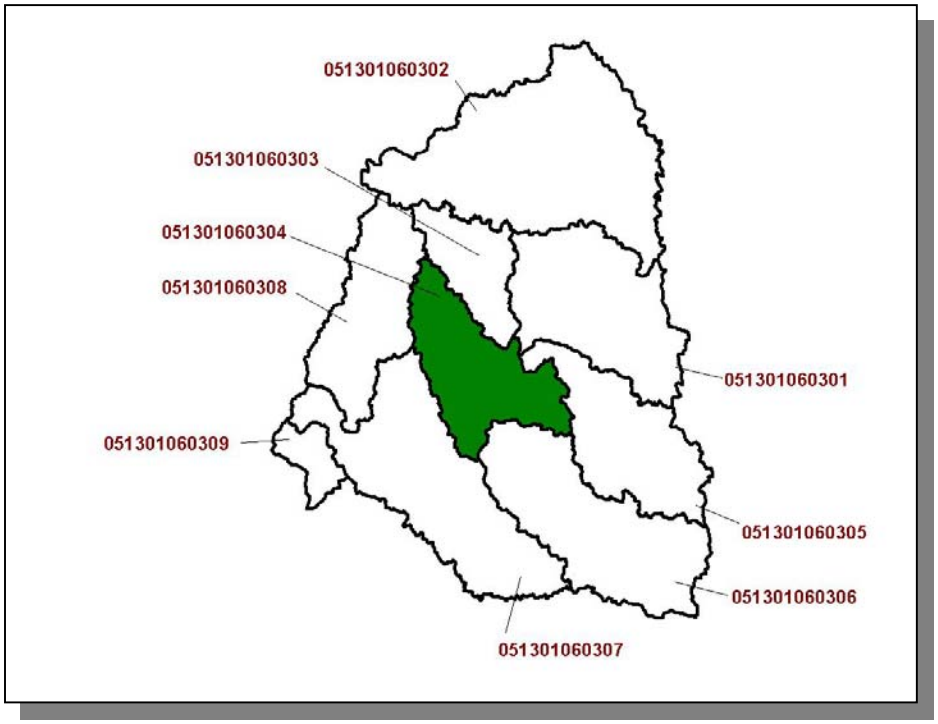

Figure 4-115. Location of Subwatershed 051301060304. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

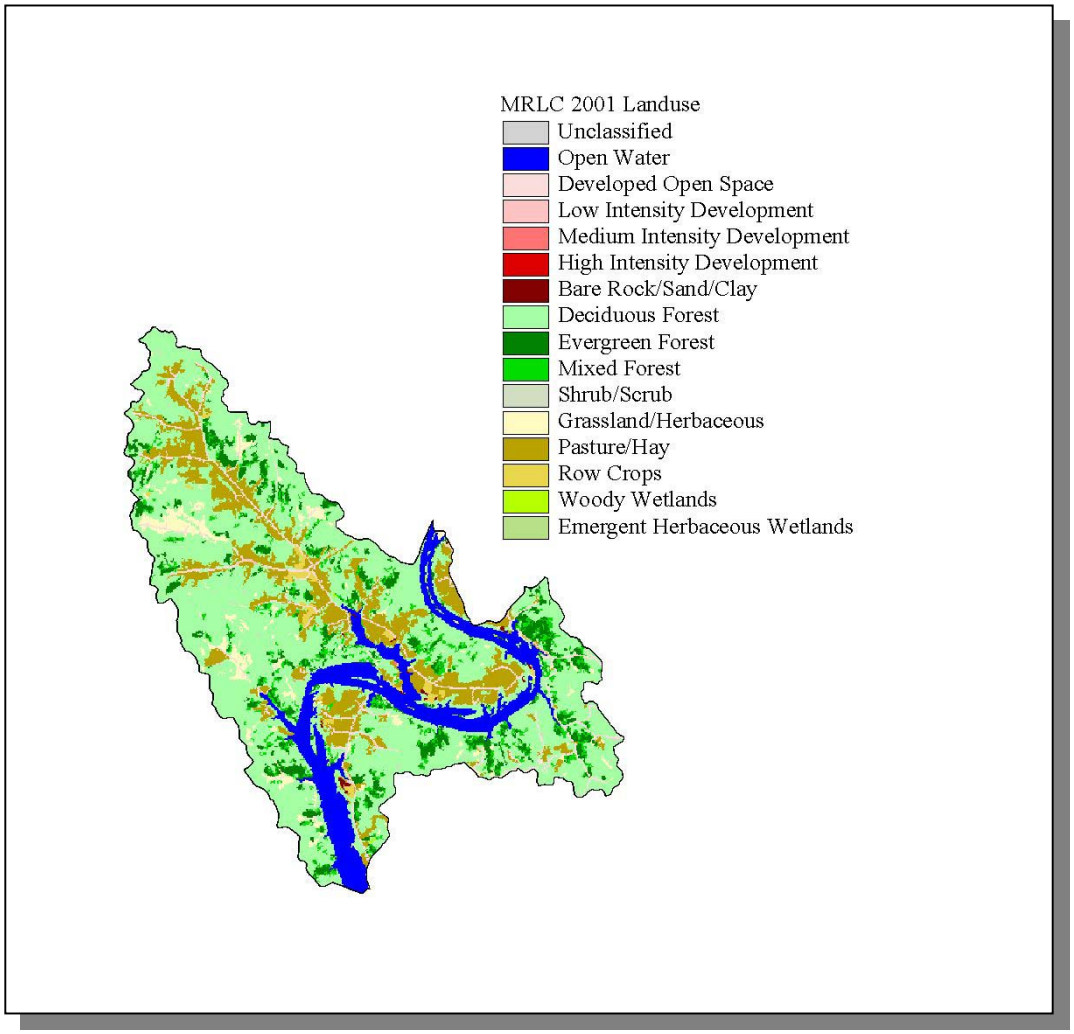

Figure 4-116. Illustration of Land Use Distribution in Subwatershed 051301060304.

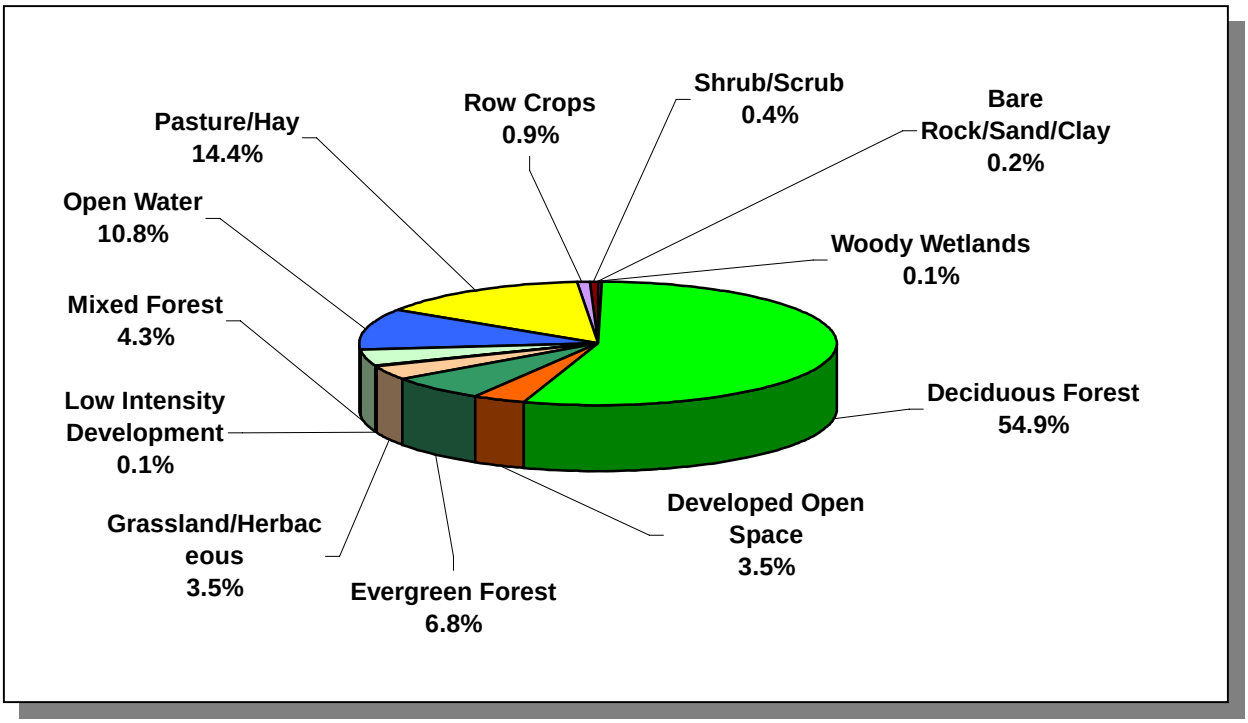

Figure 4-117. Land Use Distribution in Subwatershed 051301060304. *More information is provided in Appendix IV.*

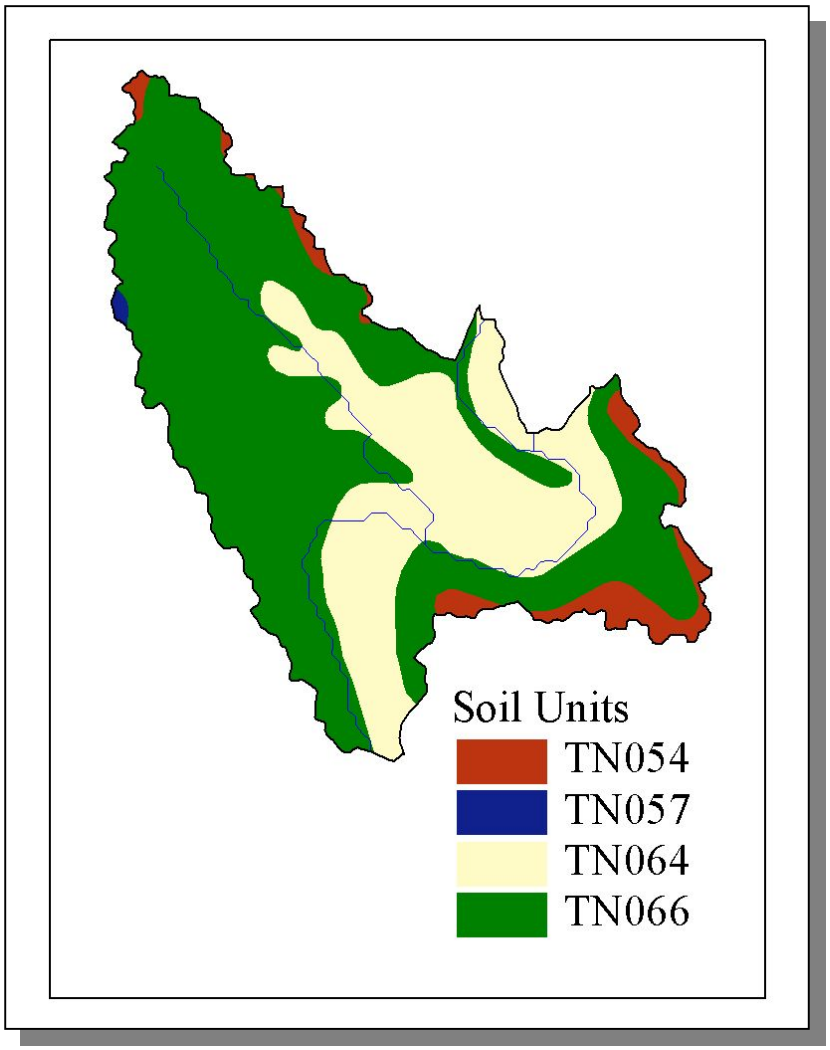

Figure 4-118. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060304.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN057	0.00	C	1.15	5.01	Clayey Loam	0.33
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28

Table 4-90. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060304. *The definition of "Hydrologic Group" is provided in Appendix IV.*

.

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Jackson	9,297	9,537	10,984	8.06	749	769	885	18.2
Smith	14,143	16,047	17,712	1.9	269	305	337	25.3
Total	**23,440**	**25,584**	**28,696**		**1,018**	**1,074**	**1,222**	**20.0**

Table 4-91. Population Estimates in Subwatershed 051301010304.

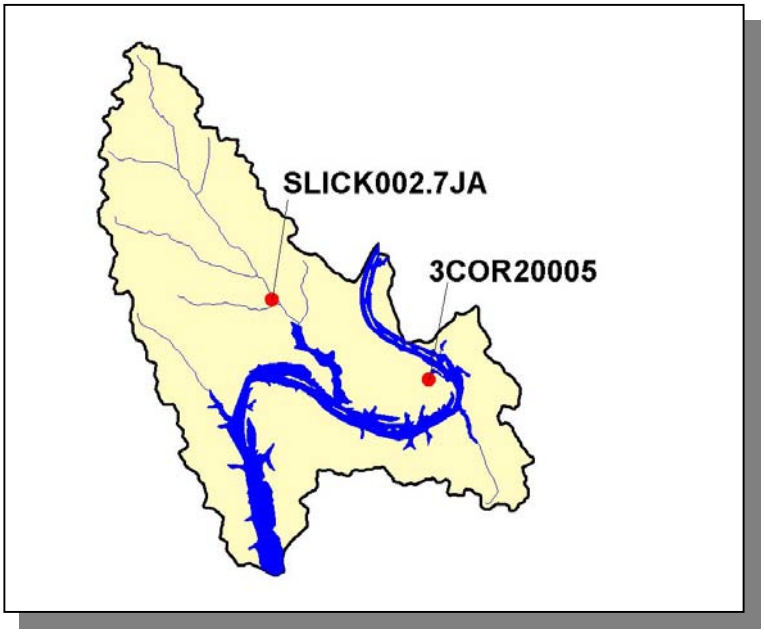

Figure 4-119. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060304. *More information, including site names and locations, is provided in Appendix IV.*

4.2.C.iv.a. Point Source Contributions.

There are no point source contributions in this subwatershed.

4.2.C.iv.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
1,269	2,198	24	<5	99	14

Table 4-92. Summary of Livestock Count Estimates in Subwatershed 051301060304. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jackson	6,962	12,086	10	727	403	39
Smith	17,187	29,672	814	683	1,883	332

Table 4-93. Summary of Livestock Count Estimates in Jackson and Smith Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jackson	135.9	135.9	0.9	5.1
Smith	81.0	81.0	1.1	2.6

Table 4-94. Forest Acreage and Annual Removal Rates (1987-1994) in Jackson and Smith Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	2.09
Grass (Hayland)	0.12
Legumes, Grass (Hayland)	0.11
Legumes (Hayland)	0.17
Grass, Forbs, Legumes (Mixed Pasture)	1.74
Corn (Row Crops)	21.43
Soybeans (Row Crops)	6.36
Tobacco (Row Crops)	6.96
Farmsteads and Ranch Headquarters	1.15

Table 4-95. Annual Estimated Total Soil Loss in Subwatershed 051301060304.

4.2.C.v. 051301060305 (Flynn Lake Creek).

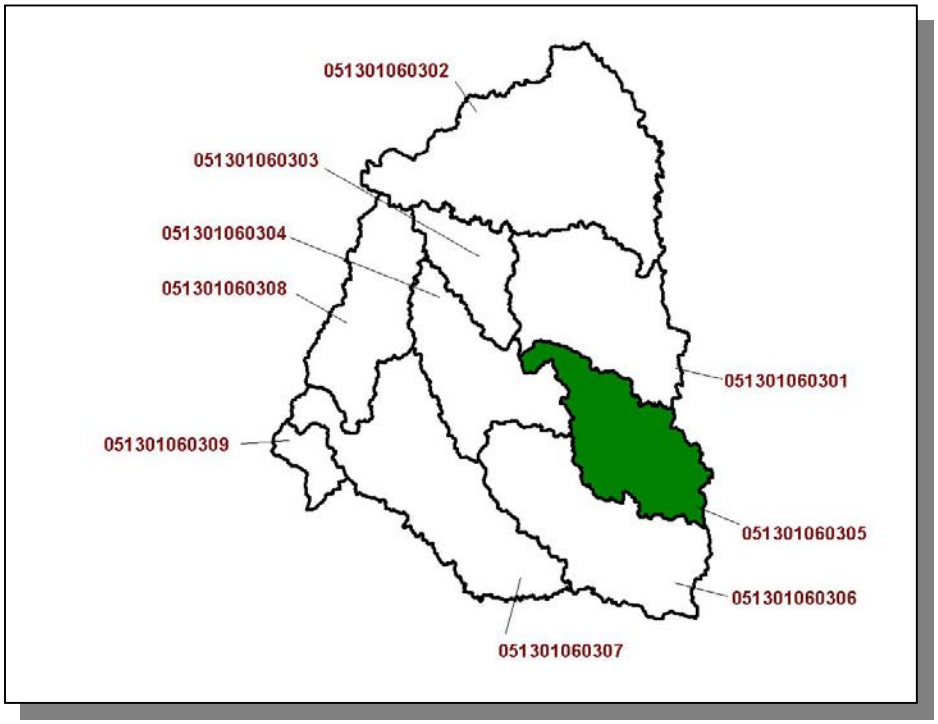

Figure 4-120. Location of Subwatershed 051301060305. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

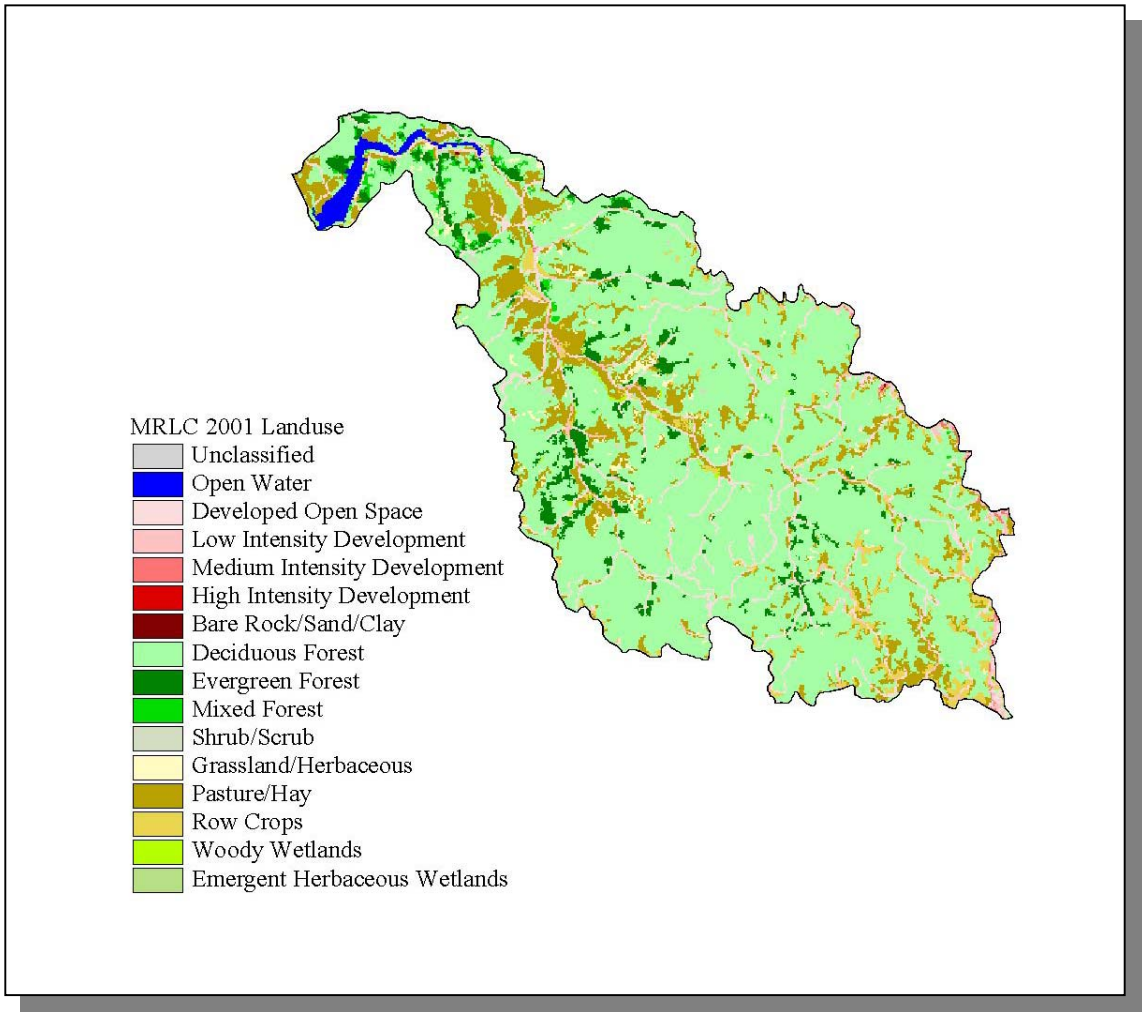

Figure 4-121. Illustration of Land Use Distribution in Subwatershed 051301060305.

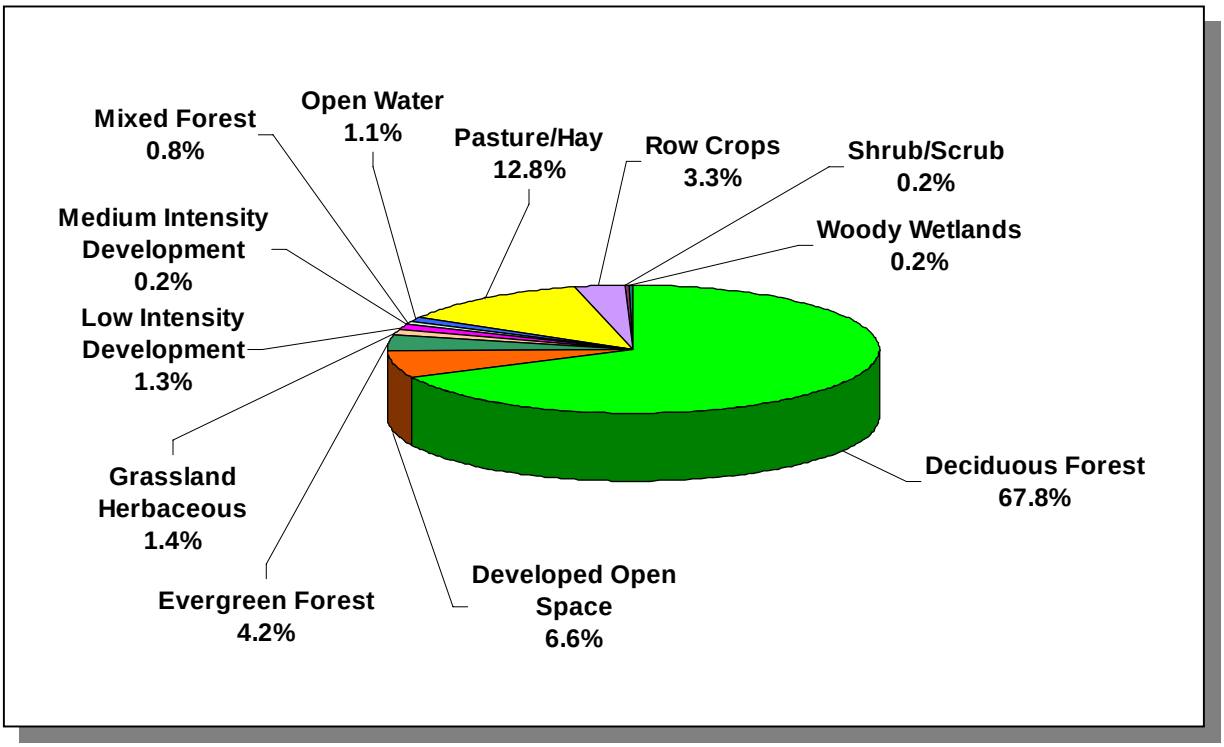

Figure 4-122. Land Use Distribution in Subwatershed 051301060305. *More information is provided in Appendix IV.*

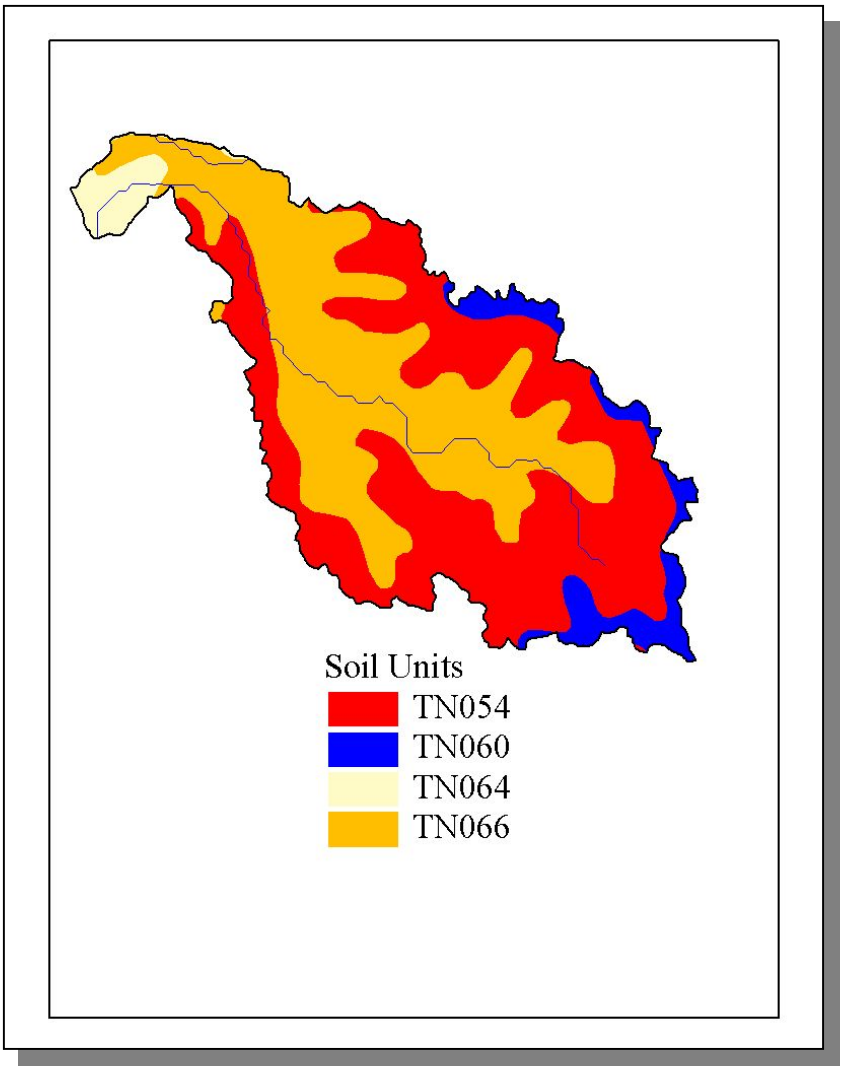

Figure 4-123. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060305.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28

Table 4-96. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060305. *The definition of "Hydrologic Group" is provided in Appendix IV.*

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	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Jackson	9,297	9,537	10,984	10.43	969	994	1,145	18.2

Table 4-97. Population Estimates in Subwatershed 051301010305.

Figure 4-124. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060305. *More information, including site names and locations, is provided in Appendix IV.*

4.2.C.v.a. Point Source Contributions.

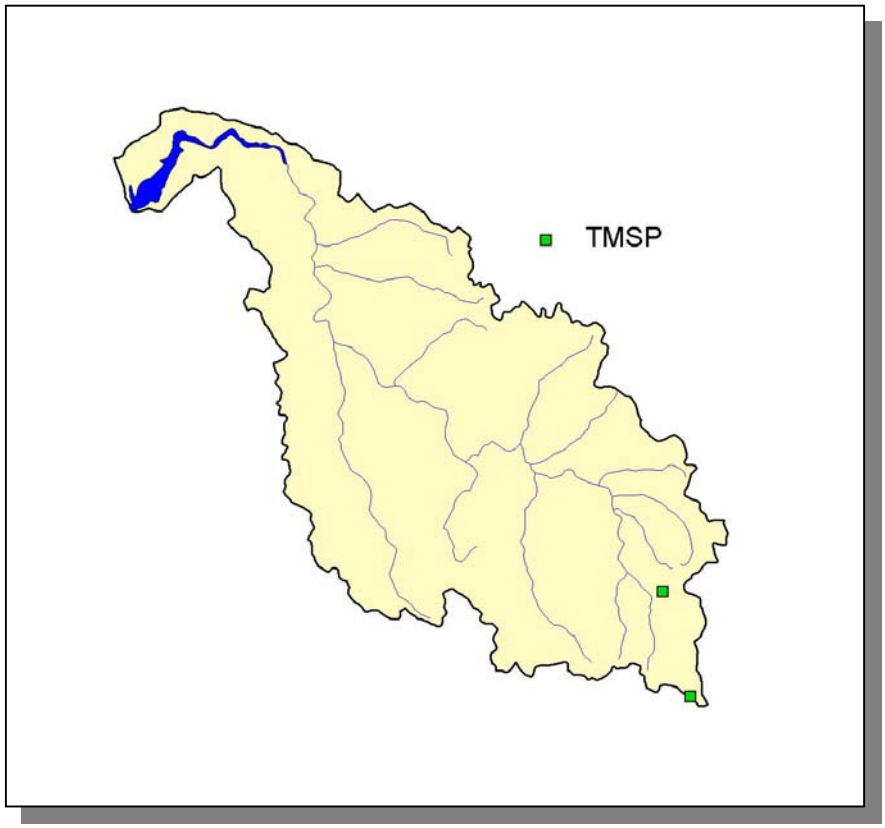

Figure 4-125. Location of Permits Issued in Subwatershed 051301060305. *More information, including the names of facilities, is provided in Appendix IV.*

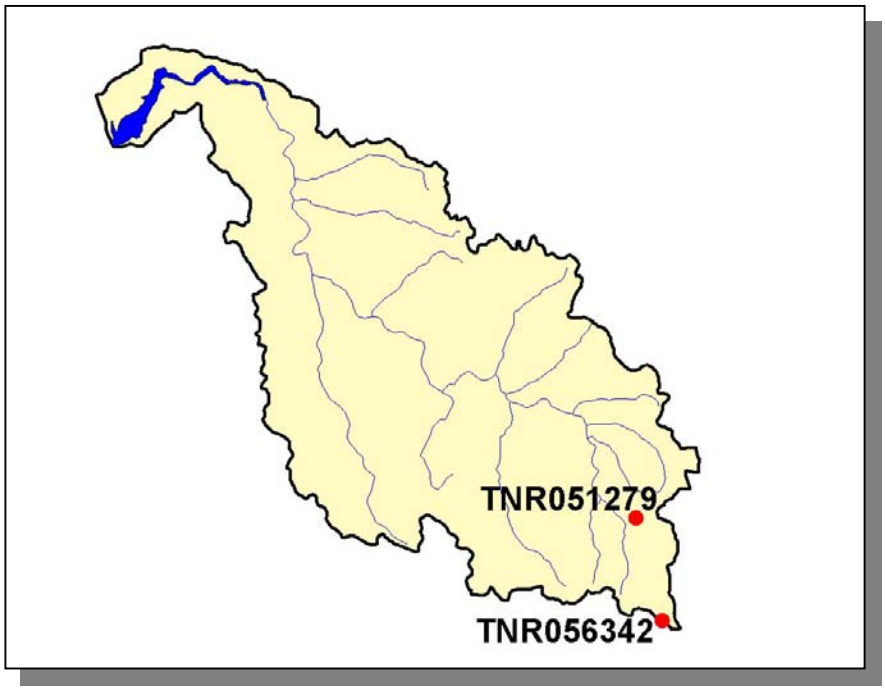

Figure 4-126. Location of TMSP Sites in Subwatershed 051301060305. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.C.v.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
573	995	<5	<5	33	<5

Table 4-98. Summary of Livestock Count Estimates in Subwatershed 051301060305. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jackson	6,962	12,086	10	727	403	39

Table 4-99. Summary of Livestock Count Estimates in Jackson County. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jackson	135.9	135.9	0.9	5.1

Table 4-100. Forest Acreage and Annual Removal Rates (1987-1994) in Jackson County.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	2.24
Legumes (Hayland)	0.17
Grass, Forbs, Legumes (Mixed Pasture)	1.99
Corn (Row Crops)	21.43
Farmsteads and Ranch Headquarters	1.31

Table 4-101. Annual Estimated Total Soil Loss in Subwatershed 051301060305.

4.2.C.vi. 051301060306 (Martin Creek).

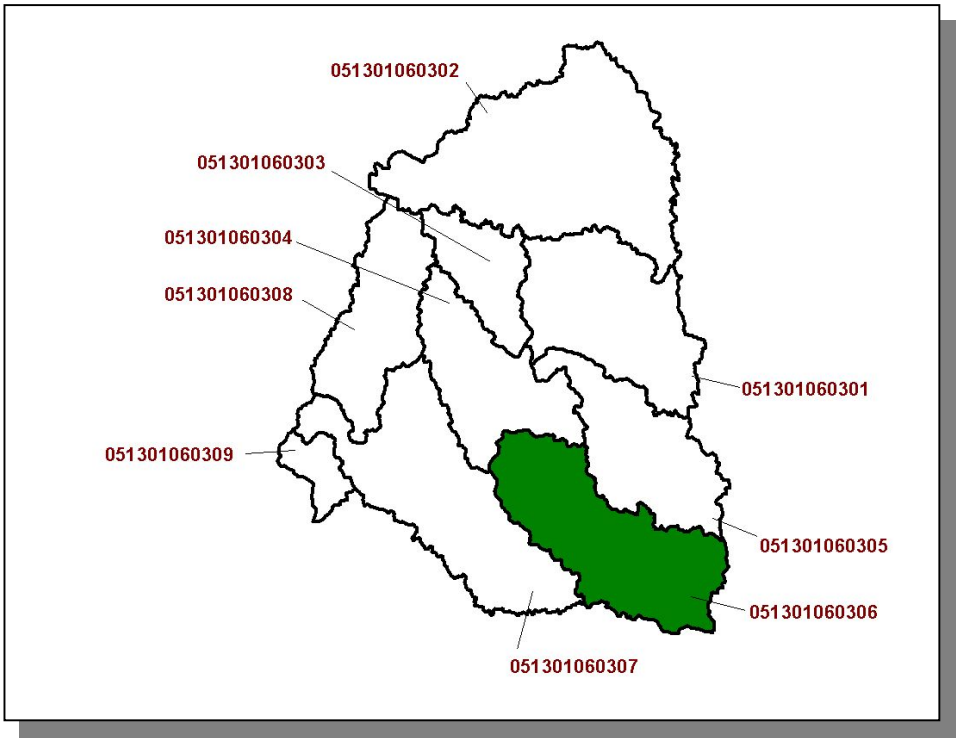

Figure 4-127. Location of Subwatershed 051301060306. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

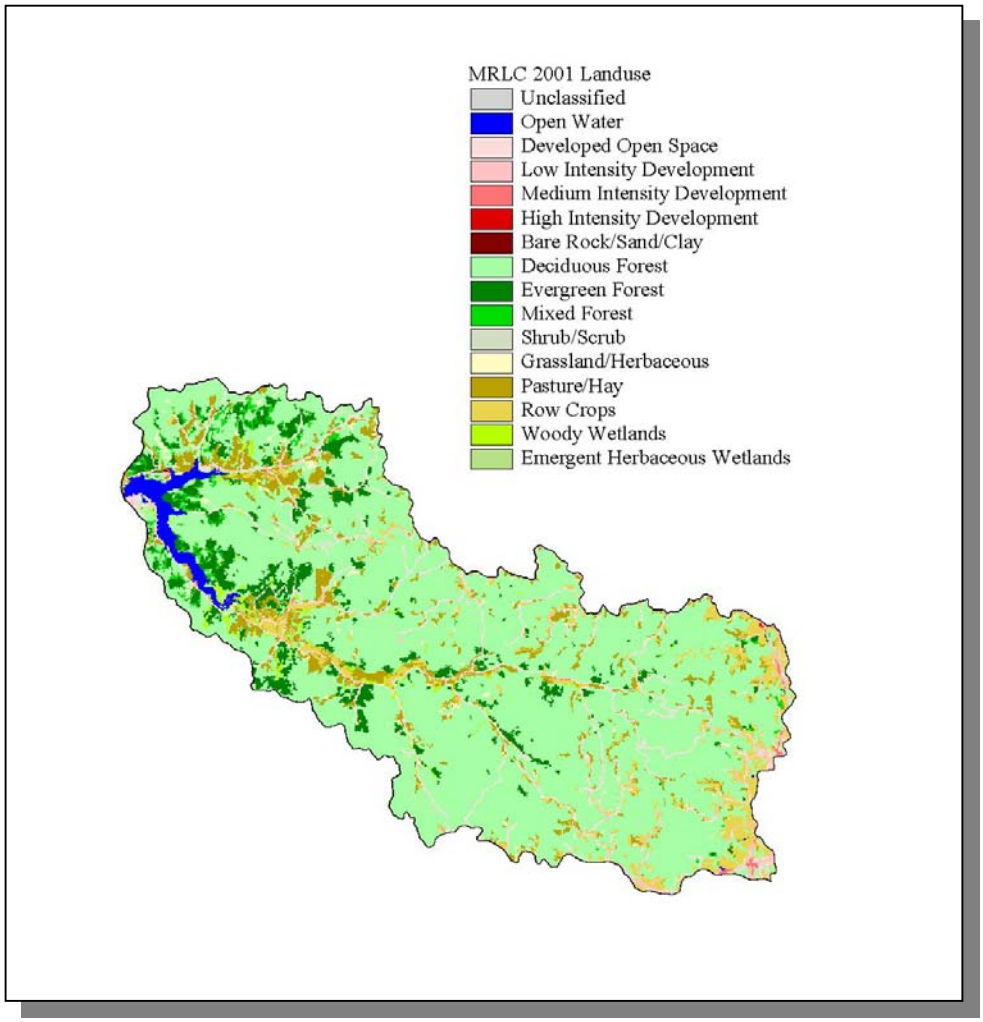

Figure 4-128. Illustration of Land Use Distribution in Subwatershed 051301060306.

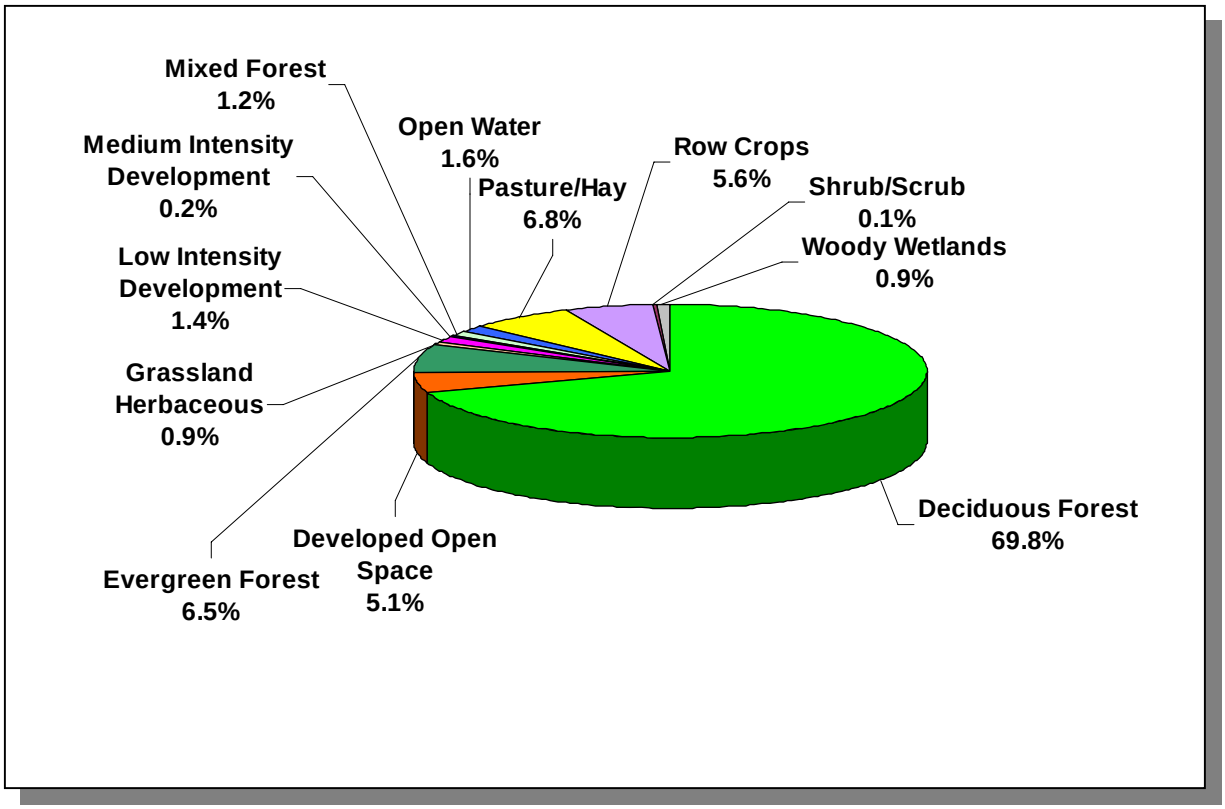

Figure 4-129. Land Use Distribution in Subwatershed 051301060306. *More information is provided in Appendix IV.*

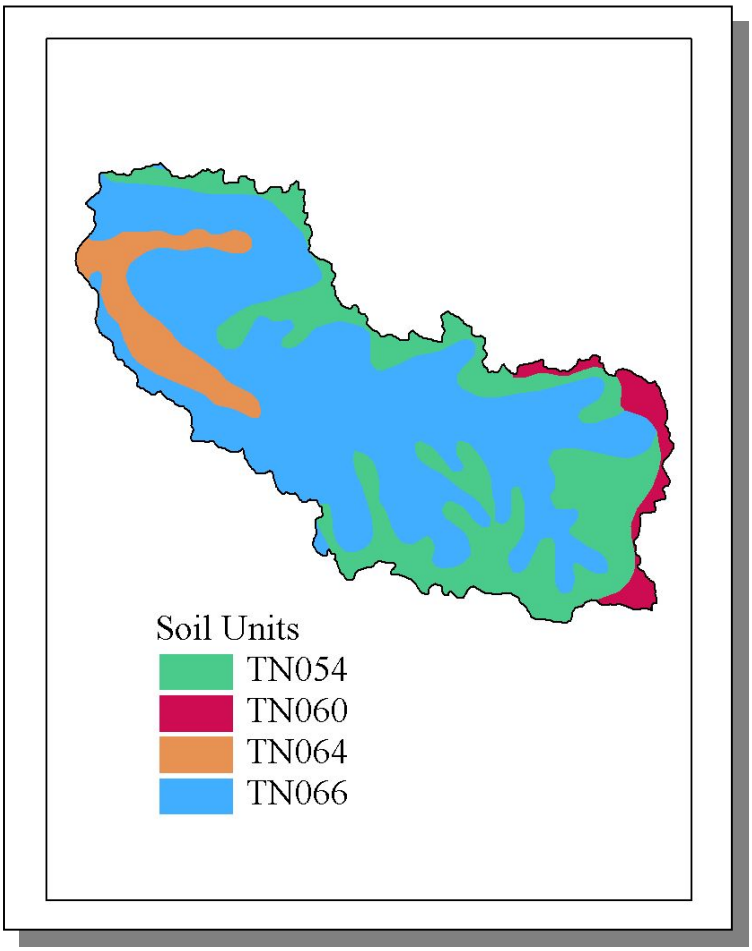

Figure 4-130. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060306.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28

Table 4-102. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060306. *The definition of "Hydrologic Group" is provided in Appendix IV.*

.

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Jackson	9,297	9,537	10,984	6.24	580	595	686	18.3
Putnam	51,373	58,326	62,315	6.73	3,458	3,926	4,194	21.3
Total	**60,670**	**71,852**	**73,299**		**4,038**	**4,521**	**4,880**	**20.9**

Table 4-103. Population Estimates in Subwatershed 051301010306.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Baxter	Putnam	1,289	579	424	153	2

Table 4-104. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051301060306.

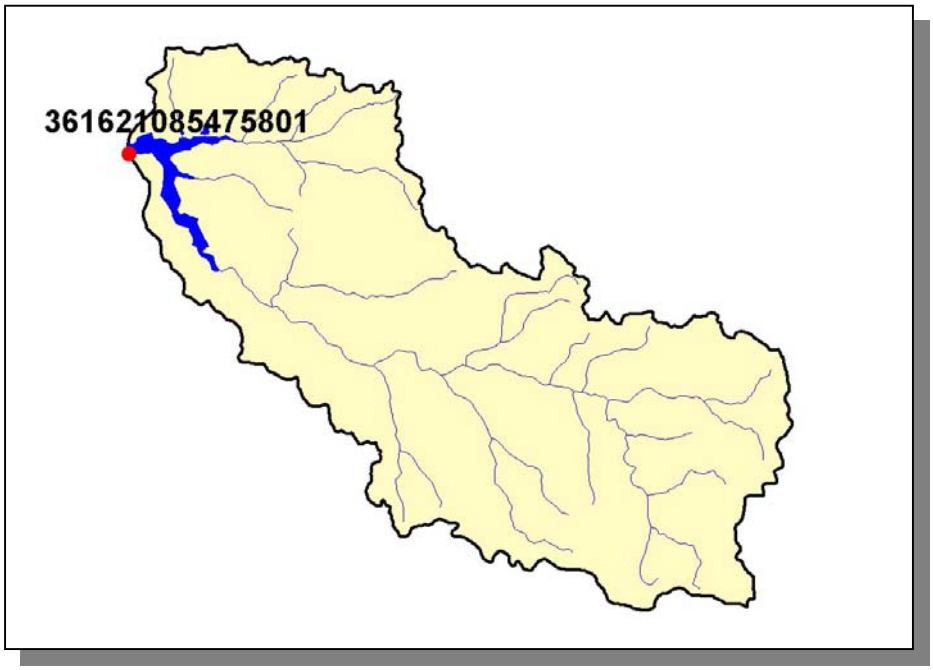

Figure 4-131. Location of Historical Streamflow Data Collection Sites in Subwatershed 051301060306. *More information is provided in Appendix IV.*

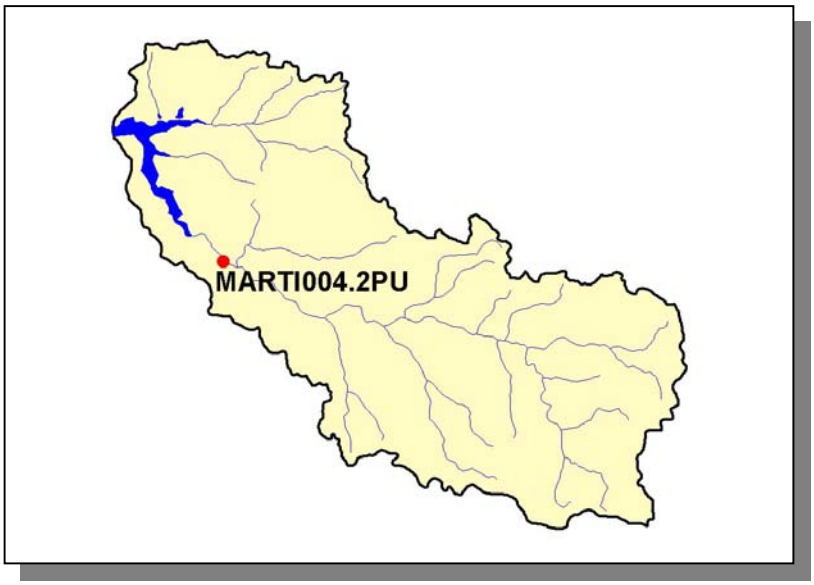

Figure 4-132. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060306. *More information, including site names and locations, is provided in Appendix IV.*

4.2.C.vi.a. Point Source Contributions.

There are no point source contributions in this subwatershed.

4.2.C.vi.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
667	1,247	33	<5	49	<5

Table 4-105. Summary of Livestock Count Estimates in Subwatershed 051301060306. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jackson	6,962	12,086	10	727	403	39
Putnam	12,592	24,817	1,095	1,025	1,070	66
Smith	17,187	29,672	814	683	1,883	332

Table 4-106. Summary of Livestock Count Estimates in Jackson, Putnam, and Smith Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jackson	135.9	135.9	0.9	5.1
Putnam	152.5	152.3	3.6	16.4
Smith	81.0	81.0	1.1	2.6

Table 4-107. Forest Acreage and Annual Removal Rates (1987-1994) in Jackson, Putnam, and Smith Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	2.04
Grass (Hayland)	1.63
Legumes (Hayland)	0.20
Legumes, Grass (Hayland)	0.61
Grass, Forbs, Legumes (Mixed Pasture)	1.40
Corn (Row Crops)	21.43
Soybeans (Row Crops)	6.36
Tobacco (Row Crops)	12.37
Other Vegetable and Truck Crops	14.60
Farmsteads and Ranch Headquarters	0.68

Table 4-108. Annual Estimated Total Soil Loss in Subwatershed 051301060306.

4.2.C.vii. 051301060307 (Cumberland River).

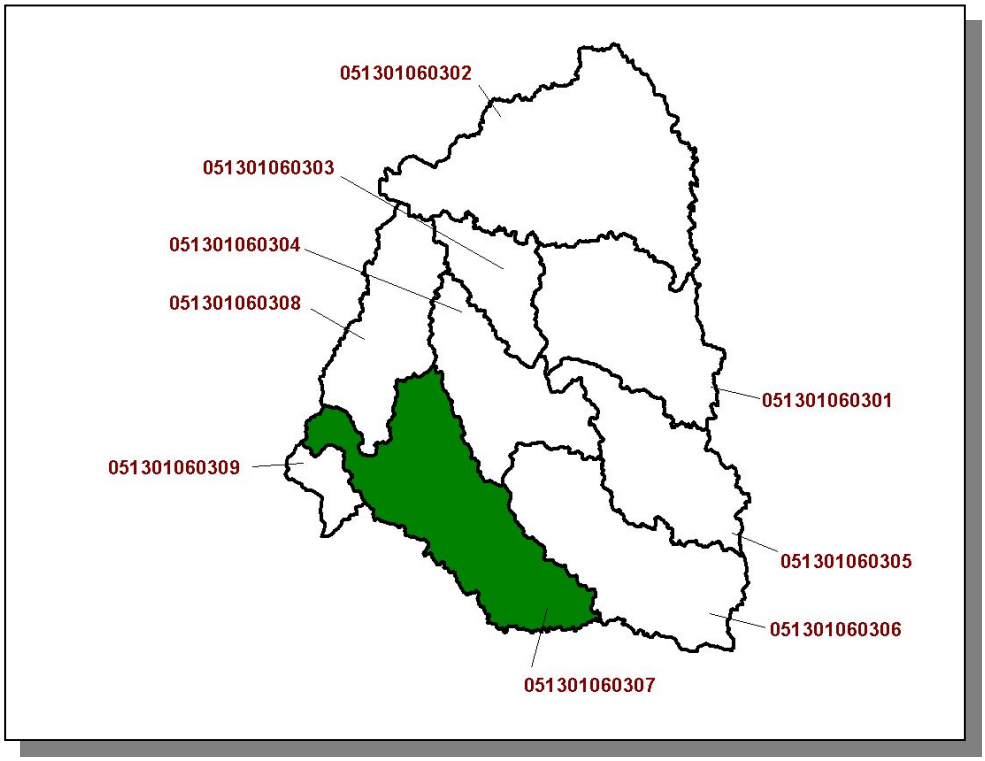

Figure 4-133. Location of Subwatershed 051301060307. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

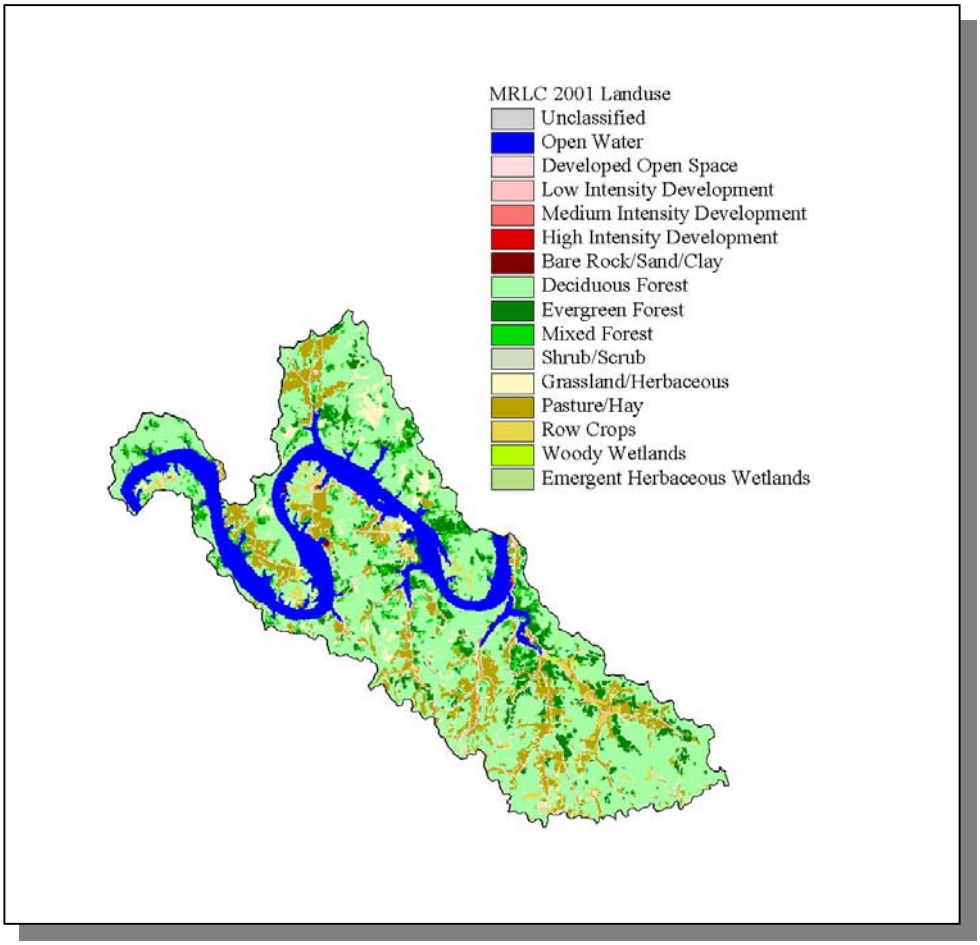

Figure 4-134. Illustration of Land Use Distribution in Subwatershed 051301060307.

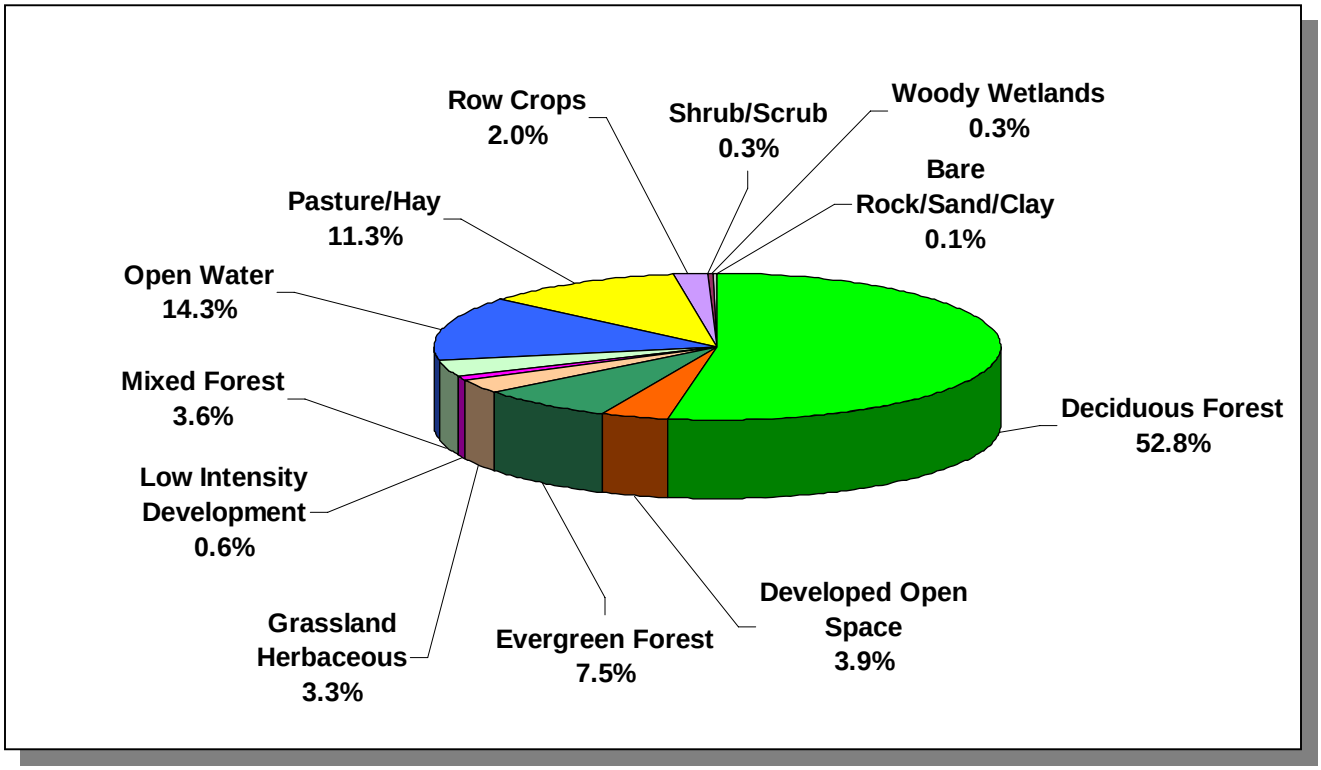

Figure 4-135. Land Use Distribution in Subwatershed 051301060307. *More information is provided in Appendix IV.*

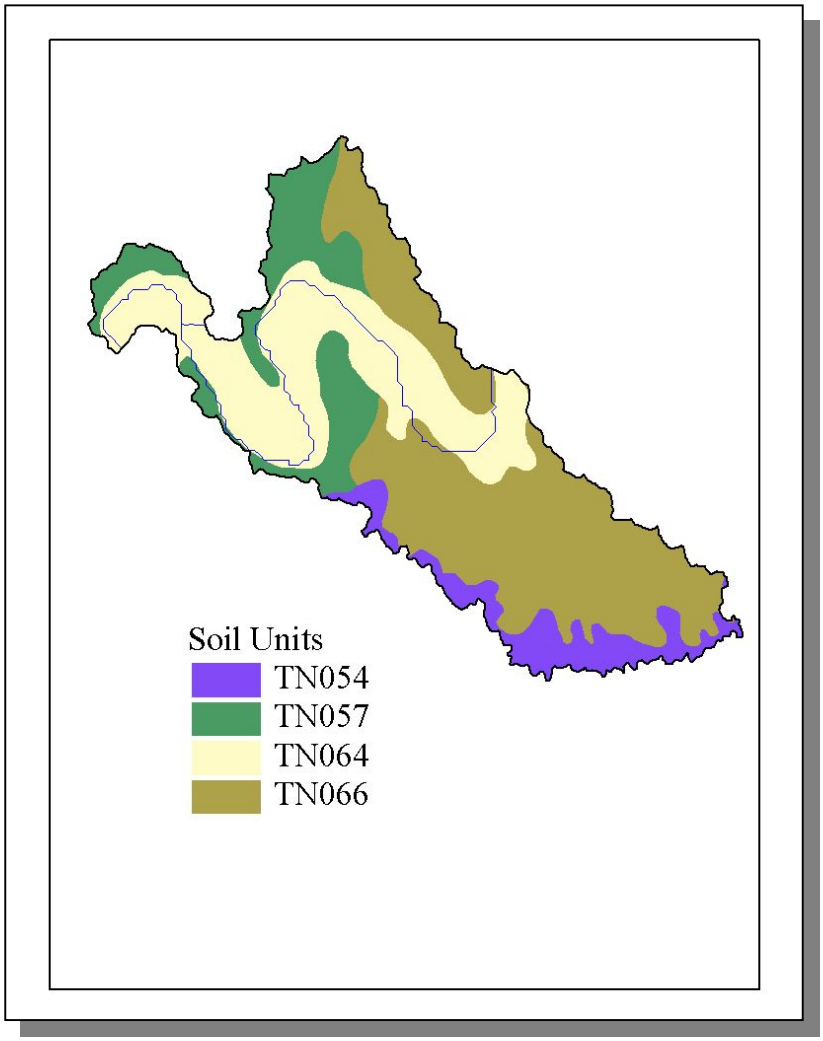

Figure 4-136. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060307.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN057	0.00	C	1.14	5.01	Clayey Loam	0.33
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28

Table 4-109. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060307. *The definition of "Hydrologic Group" is provided in Appendix IV.*

.

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Jackson	9,297	9,537	10,984	1.76	163	167	193	18.4
Putnam	51,373	58,326	62,315	2.81	1,443	1,638	1,750	21.3
Smith	14,143	16,947	17,712	11.79	1,668	1,892	2,089	25.2
Total	**74,813**	**83,910**	**91,011**		**3,274**	**3,697**	**4,932**	**23.2**

Table 4-110. Population Estimates in Subwatershed 051301010307.

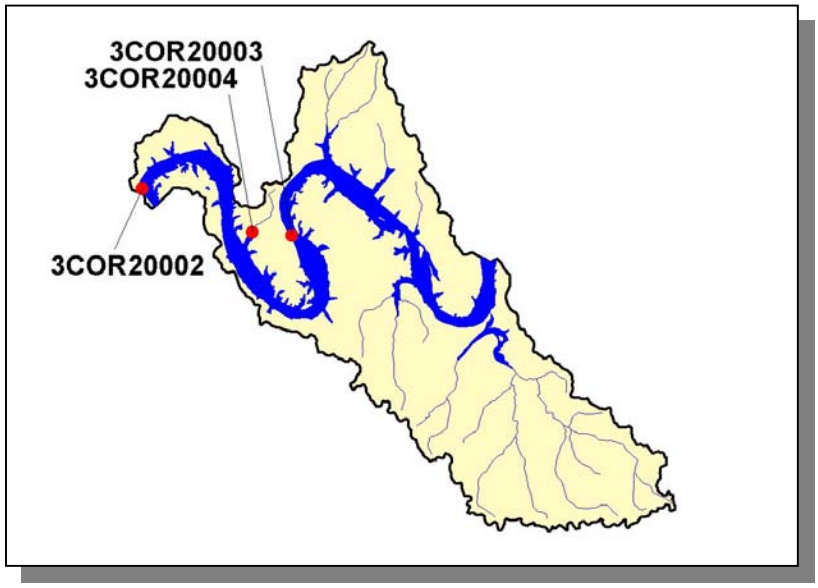

Figure 4-137. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060307. *More information, including site names and locations, is provided in Appendix IV.*

4.2.C.vii.a. Point Source Contributions.

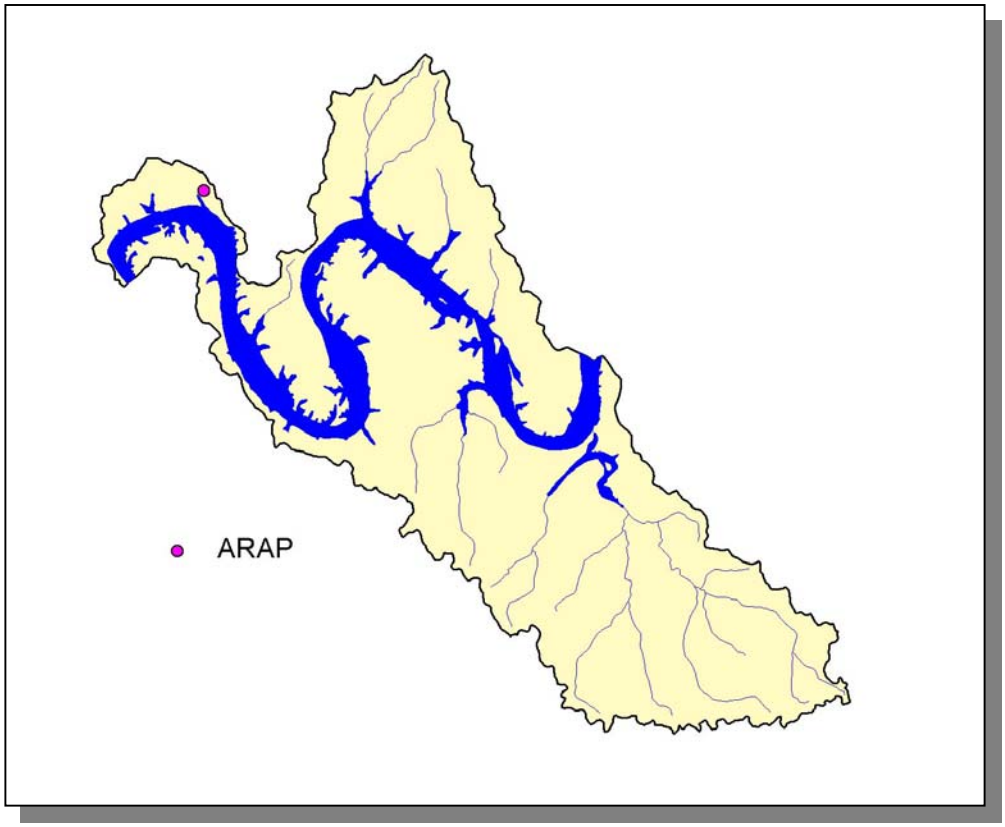

Figure 4-138. Location of Permits Issued in Subwatershed 051301060307. *More information, including the names of facilities, is provided in Appendix IV.*

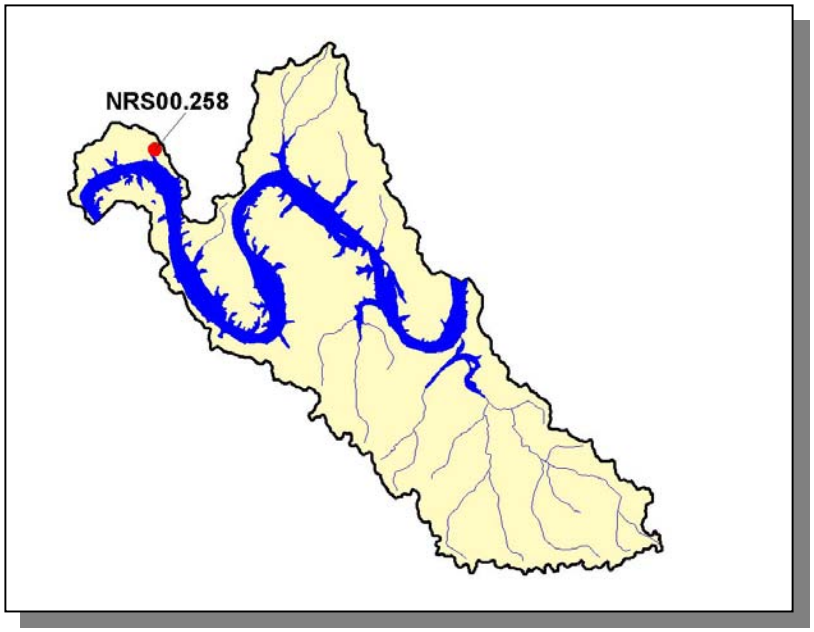

Figure 4-139. Location of Aquatic Resource Alteration Permit (ARAP) Sites (Individual Permits) in Subwatershed 051301060307. *More information is provided in Appendix IV.*

4.2.C.vii.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
1,894	3,326	97	4	199	33

Table 4-111. Summary of Livestock Count Estimates in Subwatershed 051301060307. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older; "Chickens Sold" are all chickens used to produce meat.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Jackson	6,962	12,086	10	727	403	39
Putnam	12,592	24,817	1,095	1,025	1,070	66
Smith	17,187	29,672	814	683	1,883	332

Table 4-112. Summary of Livestock Count Estimates in Jackson, Putnam, and Smith Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Jackson	135.9	135.9	0.9	5.1
Putnam	152.5	152.3	3.6	16.4
Smith	81.0	81.0	1.1	2.6

Table 4-113. Forest Acreage and Annual Removal Rates (1987-1994) in Jackson, Putnam, and Smith Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.41
Grass (Pastureland)	1.64
Grass (Hayland)	0.47
Legumes, Grass (Hayland)	0.22
Legukes (Hayland)	0.21
Grass, Forbs, Legumes (Mixed Pasture)	0.86
Corn (Row Crops)	21.43
Soybeans (Row Crops)	6.36
Tobacco (Row Crops)	8.22
Other Vegetable and Truck Crops	14.60
Farmsteads and Ranch Headquarters	0.49

Table 4-114. Annual Estimated Total Soil Loss in Subwatershed 051301060307.

4.2.C.viii. 051301060308 (Defeated Creek).

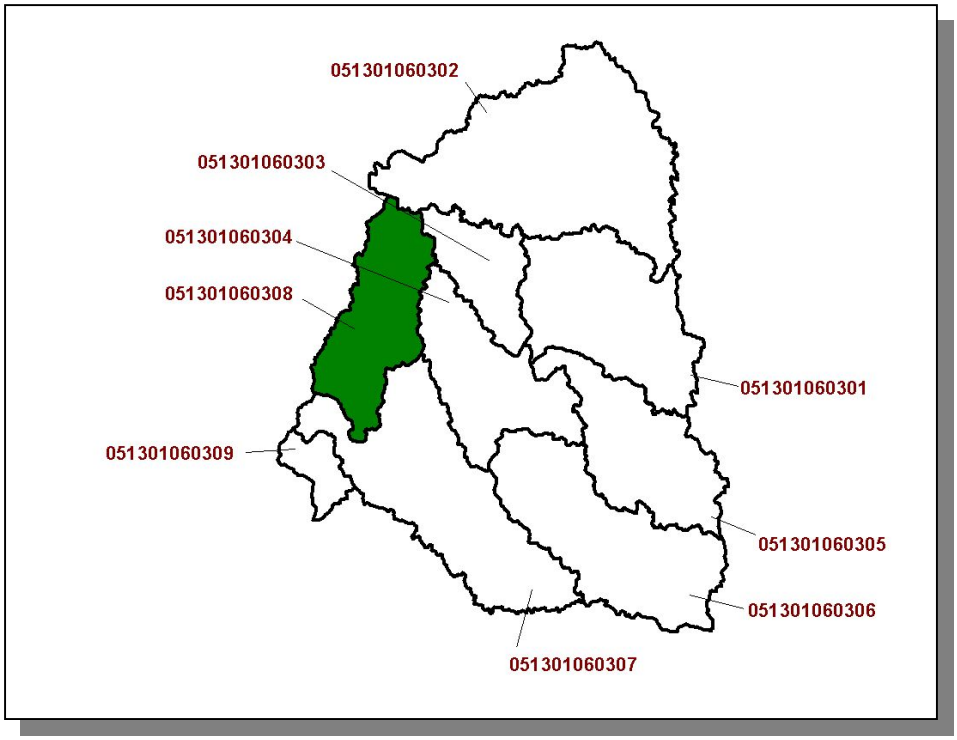

Figure 4-140. Location of Subwatershed 051301060308. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

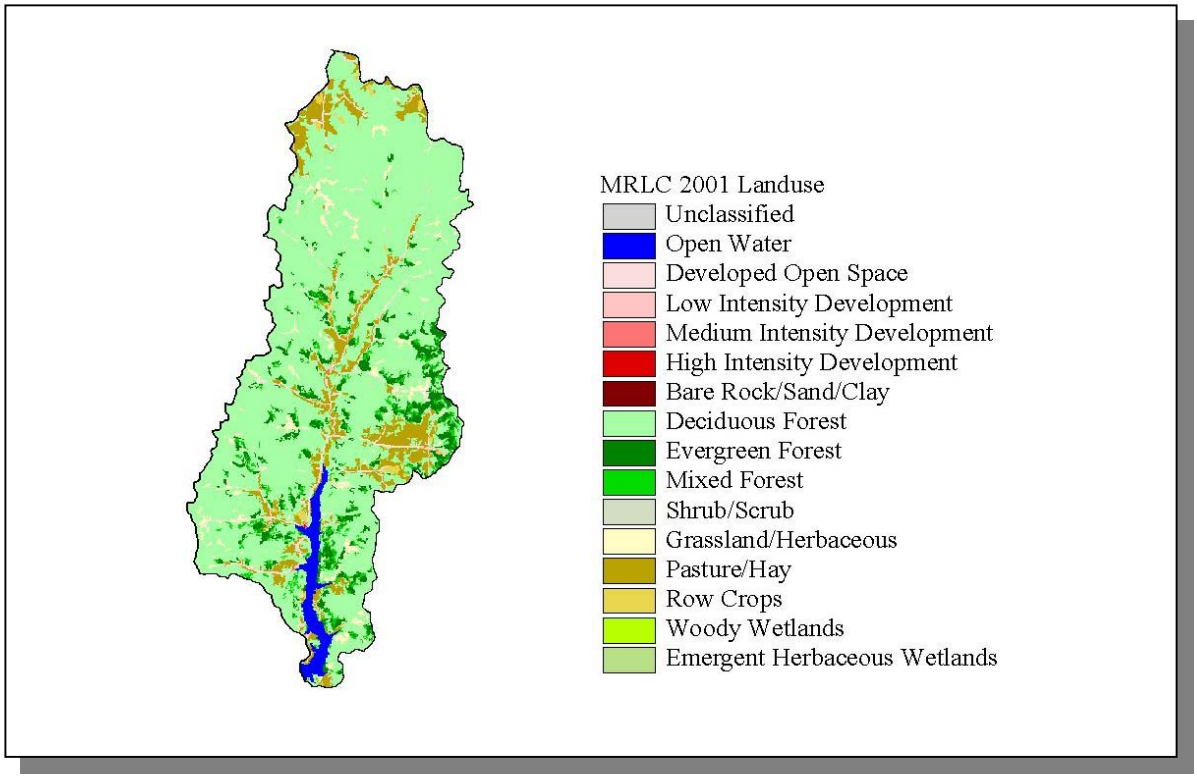

Figure 4-141. Illustration of Land Use Distribution in Subwatershed 051301060308.

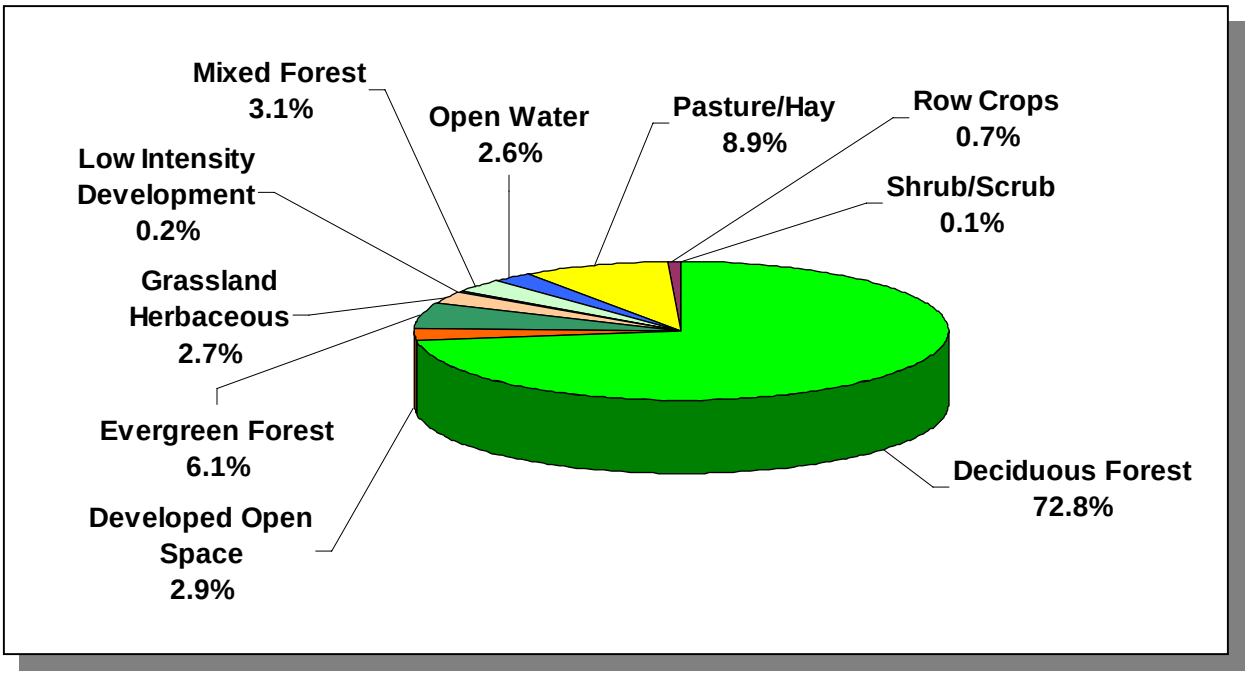

Figure 4-142. Land Use Distribution in Subwatershed 051301060308. *More information is provided in Appendix IV.*

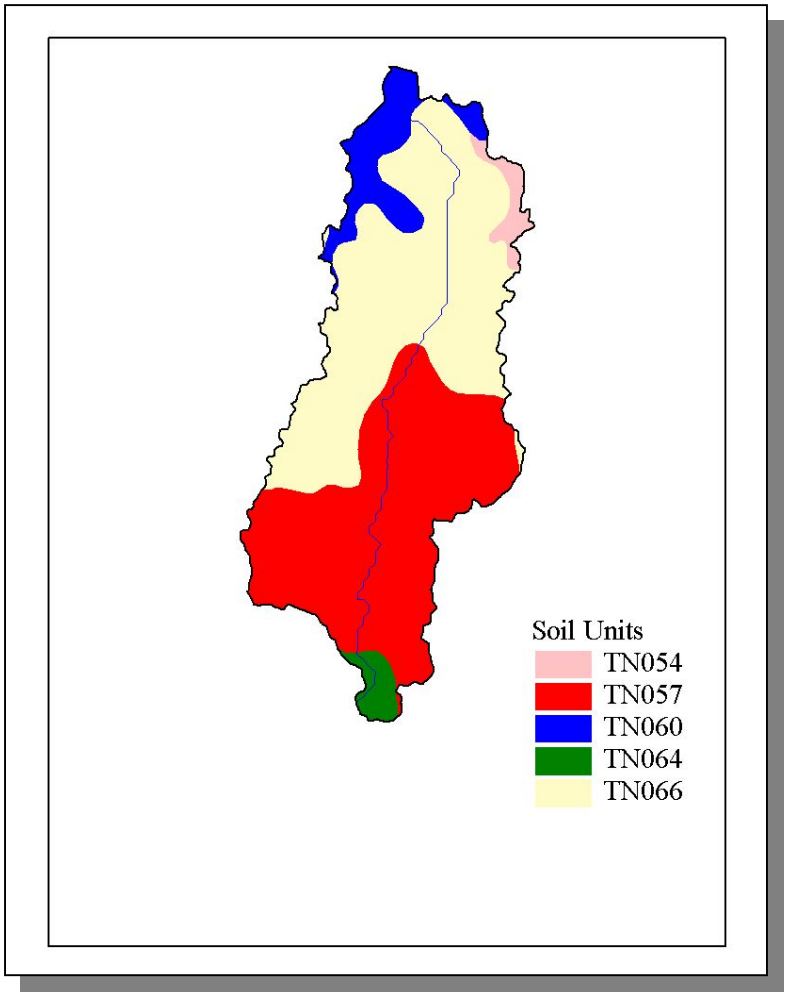

Figure 4-143. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060308.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN054	0.00	C	3.04	4.84	Loam	0.32
TN057	0.00	C	1.14	5.01	Clayey Loam	0.33
TN060	5.00	B	1.30	5.32	Silty Loam	0.39
TN064	7.00	C	1.19	5.82	Silty Loam	0.37
TN066	0.00	B	2.62	4.75	Loam	0.28

Table 4-115. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060308. *The definition of "Hydrologic Group" is provided in Appendix IV.*

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	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Macon	15,906	17,854	20,386	1.12	178	199	228	28.1
Smith	14,143	16,047	17,712	8.59	1,215	1,378	1,522	25.3
Total	**30,049**	**33,901**	**38,098**		**1,393**	**1,577**	**1,750**	**25.6**

Table 4-116. Population Estimates in Subwatershed 051301010308.

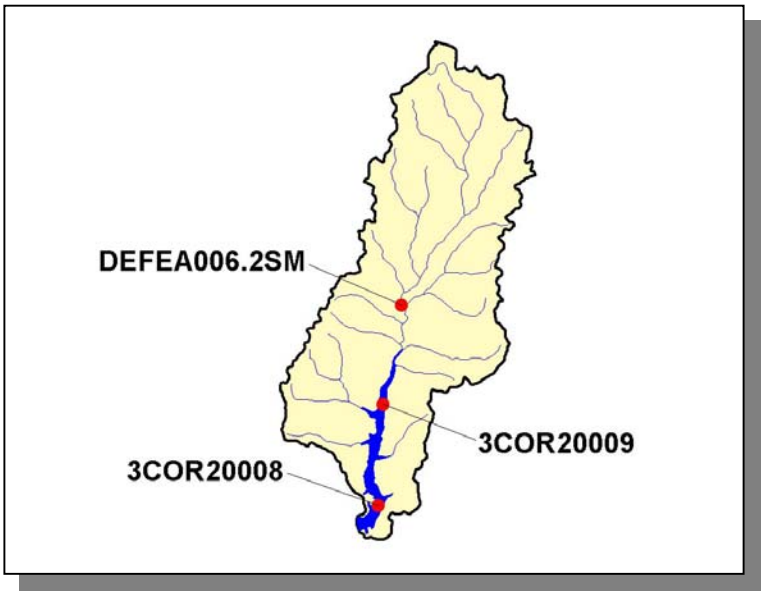

Figure 4-144. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060308. *More information, including site names and locations, is provided in Appendix IV.*

4.2.C.viii.a. Point Source Contributions.

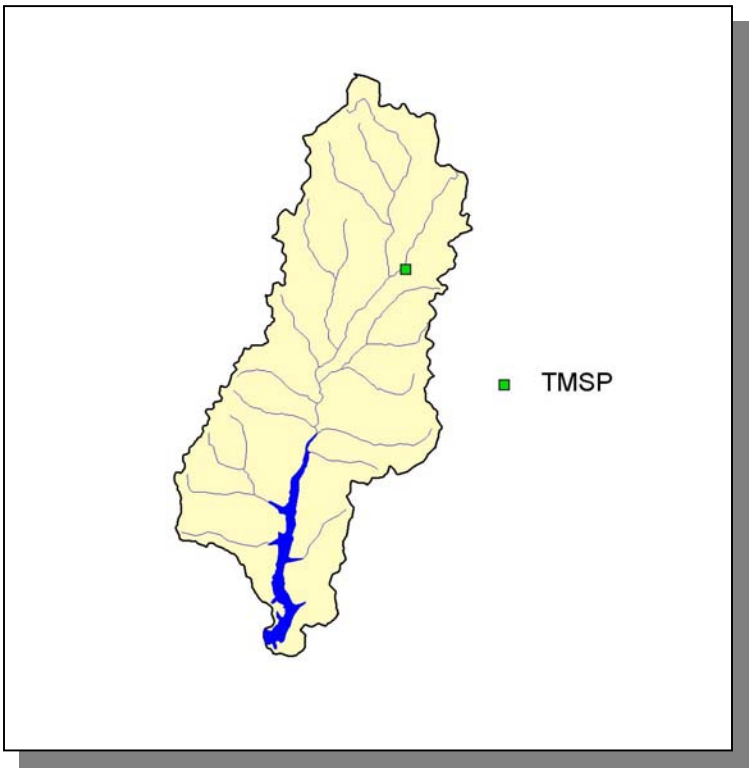

Figure 4-145. Location of Permits Issued in Subwatershed 051301060308. *More information, including the names of facilities, is provided in Appendix IV.*

Figure 4-146. Location of TMSP Sites in Subwatershed 051301060308. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.C.viii.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
1,403	2,423	61	3	163	25

Table 4-117. Summary of Livestock Count Estimates in Subwatershed 051301060308. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Macon	15,039	26,098	318	675	2,377	111
Smith	17,187	29,672	814	683	1,883	332

Table 4-118. Summary of Livestock Count Estimates in Macon and Smith Counties. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Macon				
Smith	81.0	81.0	1.1	2.6

Table 4-119. Forest Acreage and Annual Removal Rates (1987-1994) in Macon and Smith Counties.

CROPS	TONS/ACRE/YEAR
Legumes (Pastureland)	0.07
Grass (Pastureland)	1.35
Grass (Hayland)	0.13
Legumes, Grass (Hayland)	0.11
Legumes (Hayland)	0.13
Grass, Forbs, Legumes (Mixed Pasture)	0.70
Corn (Row Crops)	3.99
Soybeans (Row Crops)	6.36
Tobacco (Row Crops)	7.44
Wheat (Close-Grown Cropland)	3.43
Other Vegetable and Truck Crops	5.48
Conservation Reserve Program Lands	0.28
Farmsteads and Ranch Headquarters	0.42

Table 4-120. Annual Estimated Total Soil Loss in Subwatershed 051301060308.

4.2.C.ix. 051301060309 (Cumberland River).

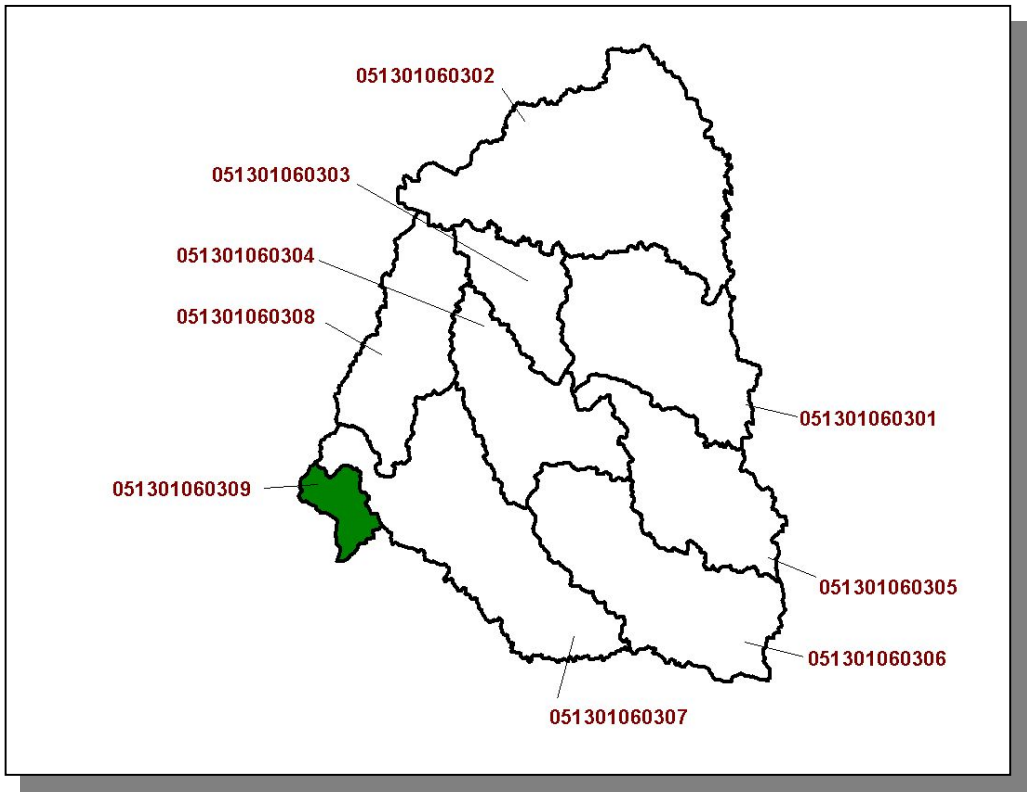

Figure 4-147. Location of Subwatershed 051301060309. *All Clear Fork of the Cumberland River Watershed HUC-12 subwatershed boundaries are shown for reference.*

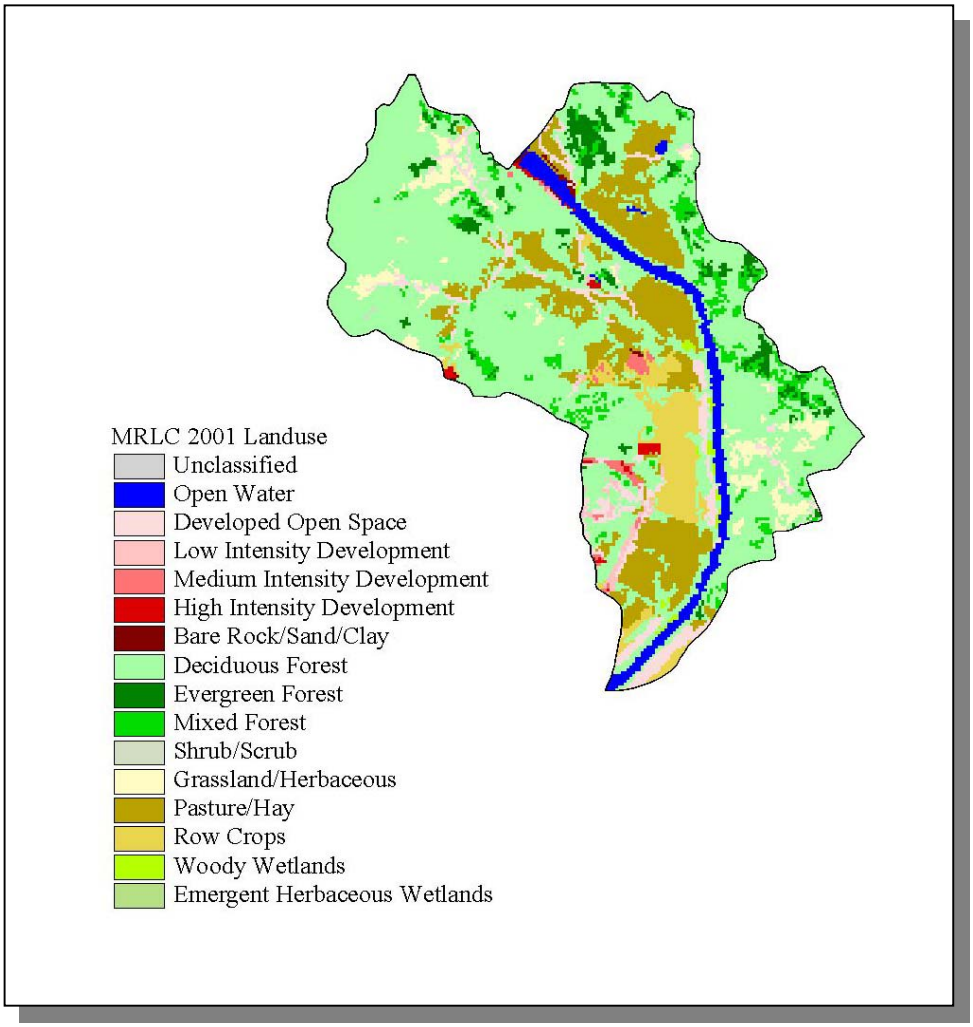

Figure 4-148. Illustration of Land Use Distribution in Subwatershed 051301060309.

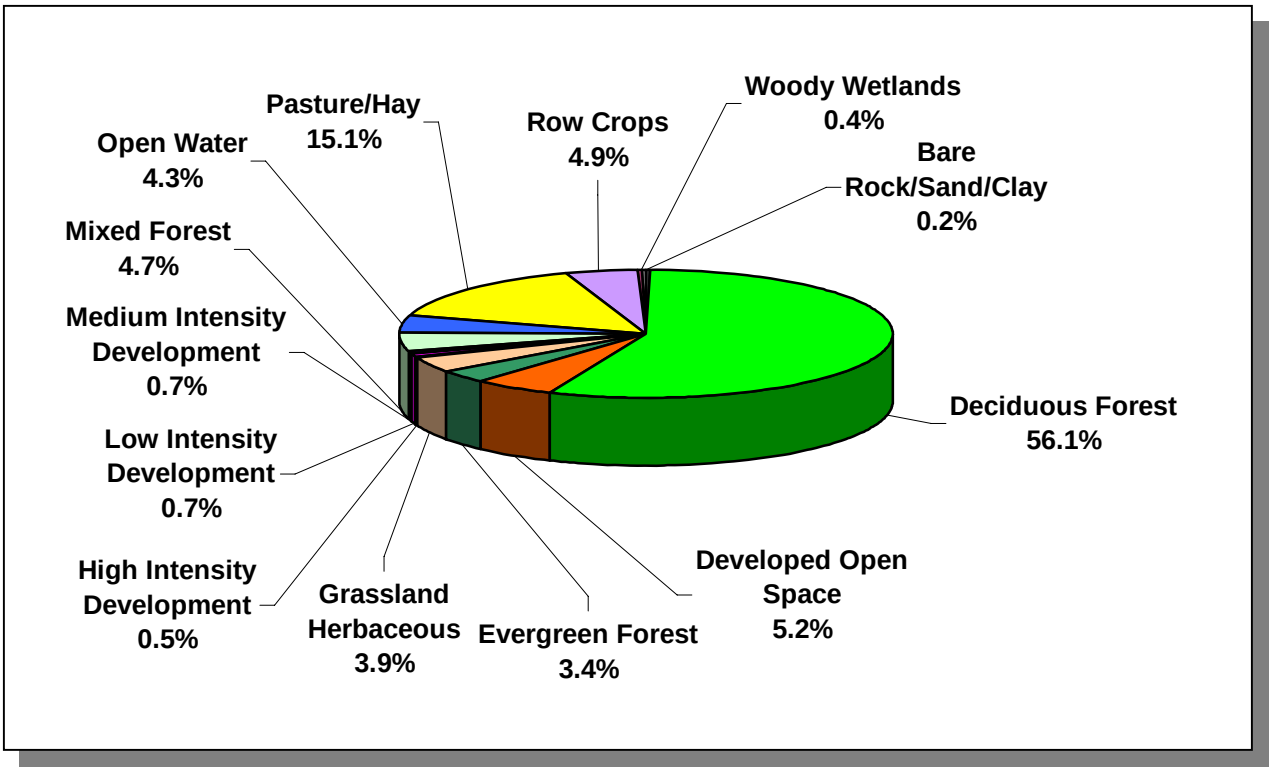

Figure 4-149. Land Use Distribution in Subwatershed 051301060309. *More information is provided in Appendix IV.*

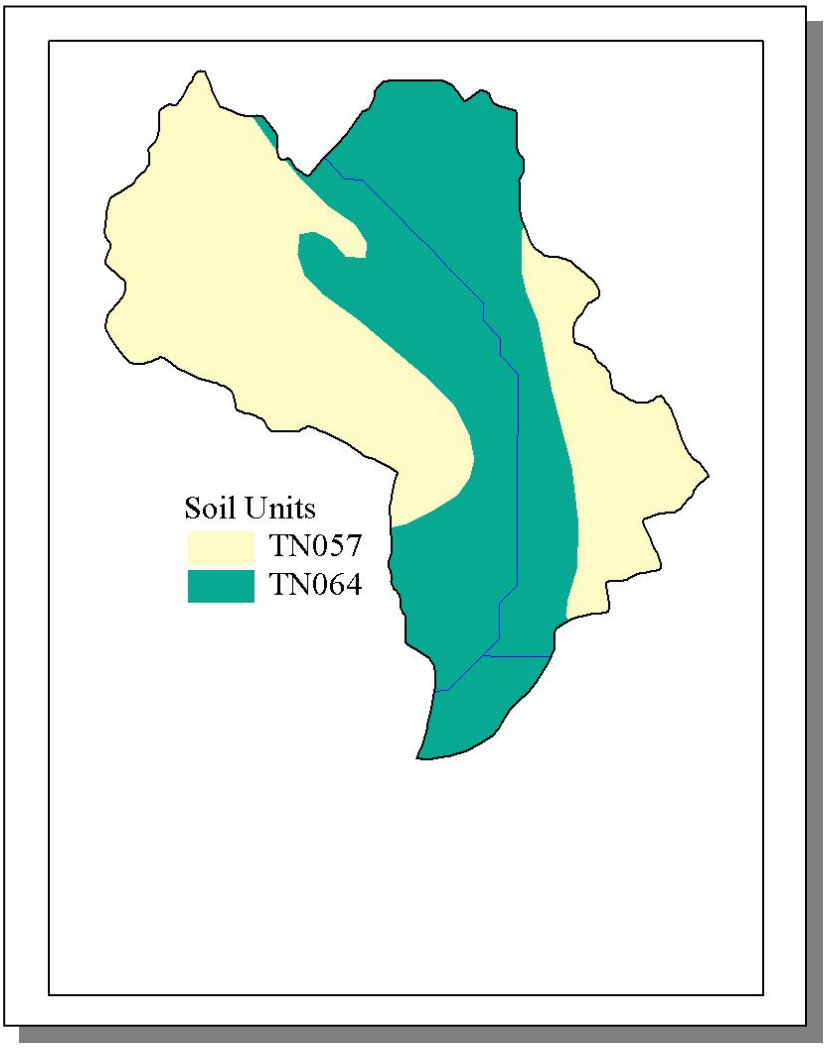

Figure 4-150. STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060309.

STATSGO MAP UNIT ID	PERCENT HYDRIC	HYDROLOGIC GROUP	PERMEABILITY (in/hour)	SOIL pH	ESTIMATED SOIL TEXTURE	SOIL ERODIBILITY
TN057	0.00	C	1.14	5.01	Clayey Loam	0.33
TN064	7.00	C	1.19	5.82	Silty Loam	0.37

Table 4-121. Soil Characteristics by STATSGO (State Soil Geographic Database) Soil Map Units in Subwatershed 051301060309. *The definition of "Hydrologic Group" is provided in Appendix IV.*

.

	COUNTY POPULATION				ESTIMATED POPULATION IN WATERSHED			
County	1990	1997	2000	Portion of Watershed (%)	1990	1997	2000	% Change (1990-2000)
Smith	14,143	16,047	17,712	2.19	309	351	387	25.2

Table 4-122. Population Estimates in Subwatershed 051301060309.

			NUMBER OF HOUSING UNITS			
Populated Place	County	Population	Total	Public Sewer	Septic Tank	Other
Carthage	Smith	2,386	1,080	1,054	23	3

Table 4-123. Housing and Sewage Disposal Practices of Select Communities in Subwatershed 051301060309.

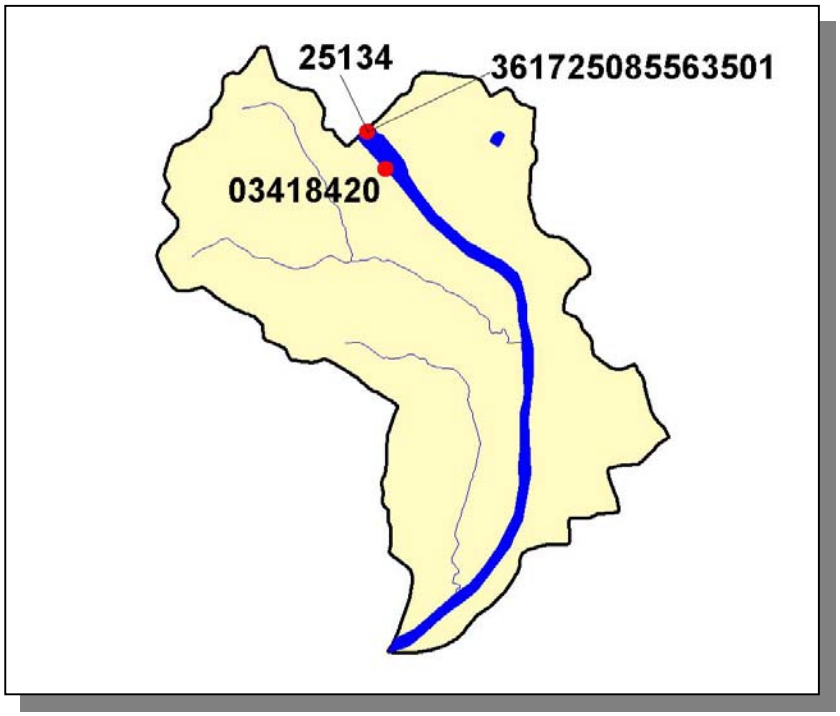

Figure 4-151. Location of Historical Streamflow Data Collection Sites in Subwatershed 051301060309. *More information is provided in Appendix IV.*

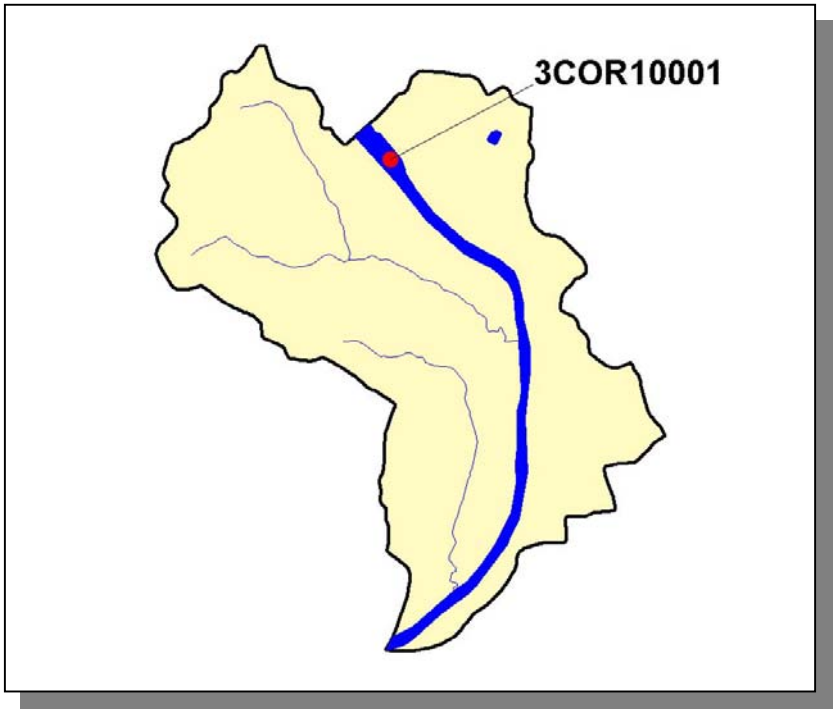

Figure 4-152. Location of Monitoring Sites in EPA's STORET Database in Subwatershed 051301060309. *More information, including site names and locations, is provided in Appendix IV.*

4.2.C.ix.a. Point Source Contributions.

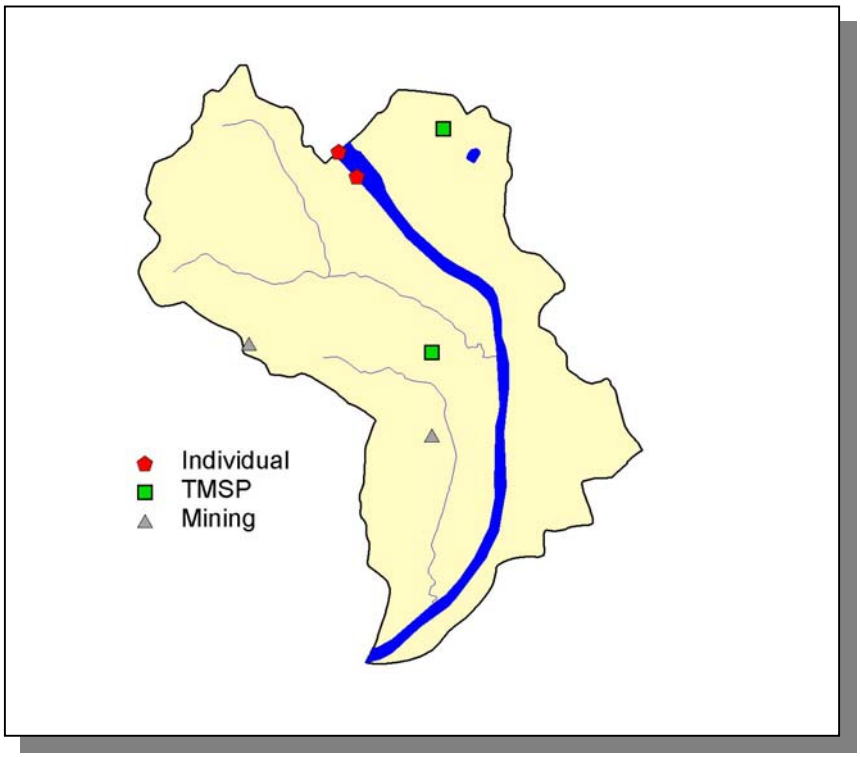

Figure 4-153. Location of Permits Issued in Subwatershed 051301060309. *More information, including the names of facilities, is provided in Appendix IV.*

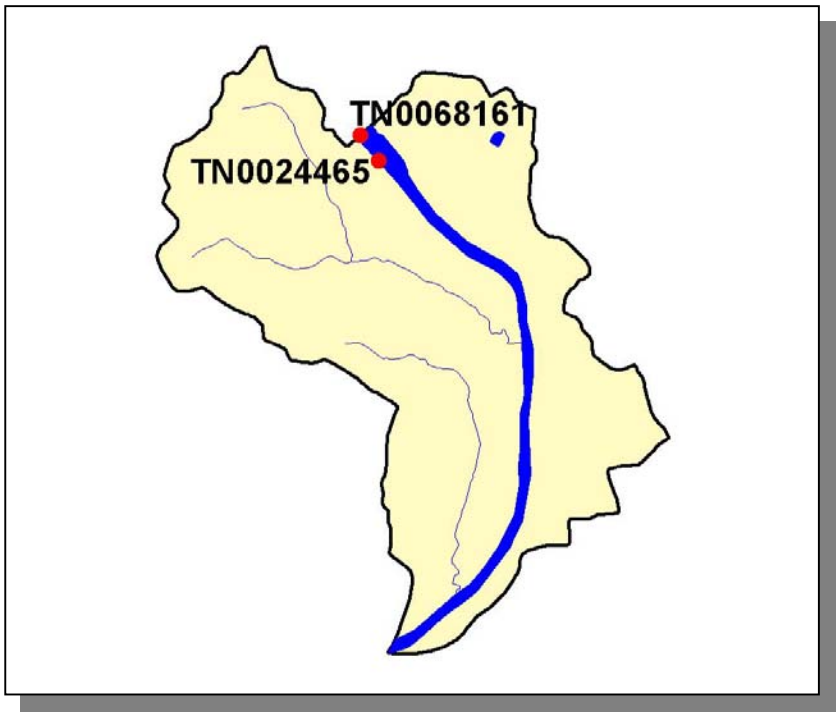

Figure 4-154. Location of Active NPDES Sites in Subwatershed 051301060309. *More information, including the names of facilities, is provided in Appendix IV.*

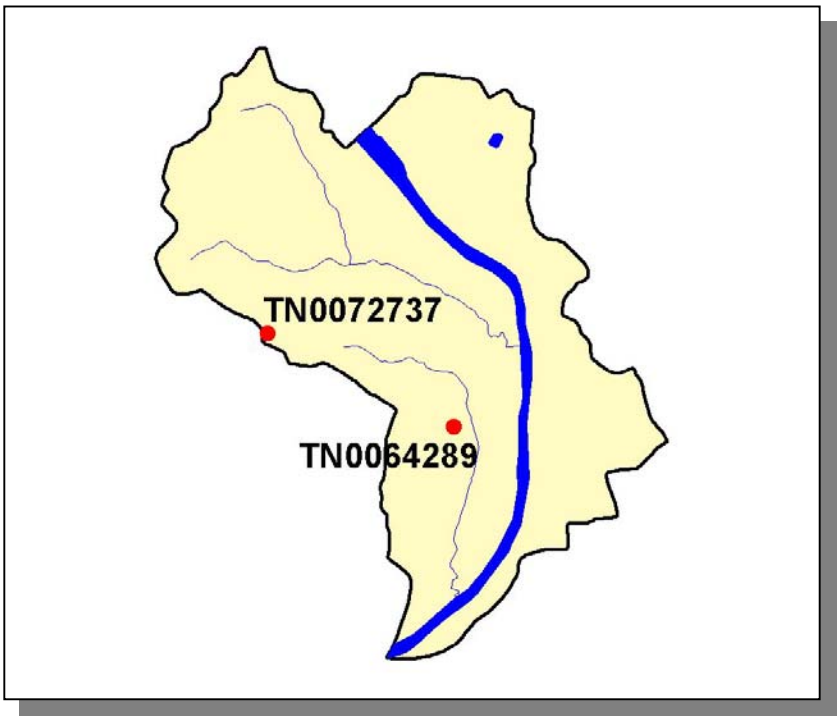

Figure 4-155. Location of Active Mining Sites in Subwatershed 051301060309. *More information, including the names of mining operations, is provided in Appendix IV.*

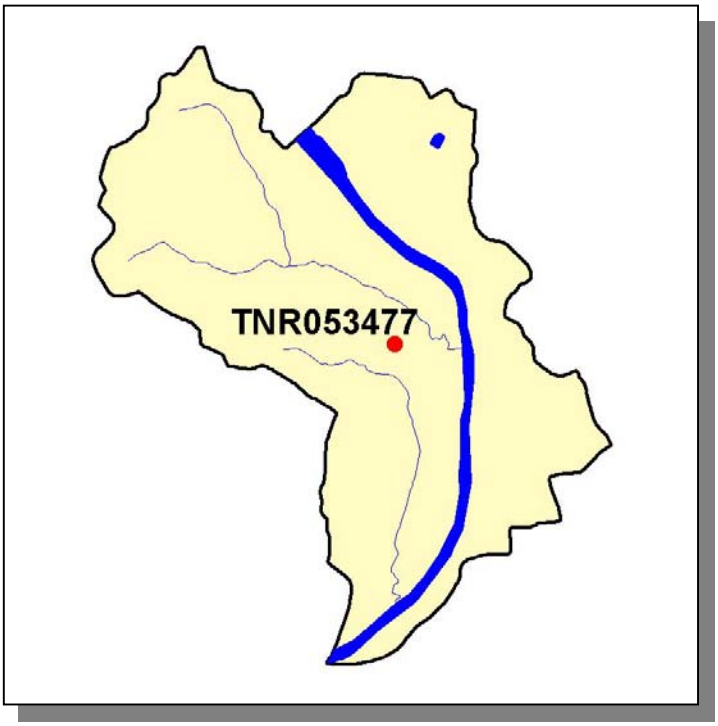

Figure 4-156. Location of TMSP Sites in Subwatershed 051301060309. *More information, including the names of facilities, is provided in Appendix IV.*

4.2.C.ix.b. Nonpoint Source Contributions.

LIVESTOCK COUNTS					
Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
618	1,068	814	<5	68	12

Table 4-124. Summary of Livestock Count Estimates in Subwatershed 051301060309. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

LIVESTOCK COUNTS						
County	Beef Cow	Cattle	Milk Cow	Chickens (Layers)	Hogs	Sheep
Smith	17,187	29,672	814	683	1,883	332

Table 4-125. Summary of Livestock Count Estimates in Smith County. *According to the 1997 Census of Agriculture (http://www.nass.usda.gov/census/), "Cattle" includes heifers, heifer calves, steers, bulls and bull calves; "Chickens" are layers 20 weeks and older.*

	INVENTORY		REMOVAL RATE	
County	Forest Land (thousand acres)	Timber Land (thousand acres)	Growing Stock (million cubic feet)	Sawtimber (million board feet)
Smith	81.0	81.0	1.1	2.6

Table 4-126. Forest Acreage and Annual Removal Rates (1987-1994) in Smith County.

CROPS	TONS/ACRE/YEAR
Grass (Pastureland)	1.47
Grass (Hayland)	0.12
Legumes, Grass (Hayland)	0.11
Grass, Forbs, Legumes (Mixed Pasture)	0.66
Soybeans (Row Crops)	6.36
Tobacco (Row Crops)	6.96
Farmsteads and Ranch Headquarters	0.45

Table 4-127. Annual Estimated Total Soil Loss in Subwatershed 051301060309.